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ABSTRACT

This volume consists of papers by representatives from the six States comprising the Comprehensive Planning State Education Agencies Project (CPSEA). The first paper, by Bernarr S. Furse, outlines common elements appearing in one or more of the models developed by the project States. Everett W. Reimer then details the need for educational planning in the present planning capability of, and a comprehensive planning program for Puerto Rico. Joseph Wolvek describes a data producing process of alternatives to aid in administrative decisionmaking in Iowa. Leonard Landry discusses Colorado's strategy to facilitate interoffice and local school district process oriented planning. Marlin L. Brockette considers the Texas program for identifying Statewide educational priorities and coordinating State education agency planning endeavors with the activities of regional education service centers. Douglas Dopp introduces Connecticut's interim report on the establishment of a planning unit and an organizational structure for the coordination and review of educational plans. Don K. Richards examines a Utah model that portrays a Statewide comprehensive educational planning mechanism. In conclusion, B. G. Pauley reports on the establishment of an Office of Educational Planning in West Virginia as a structural element to coordinate agency plans for education and to correlate the planning endeavors of other education agencies in the State. (Author/JF)

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Comprehensive Planning in State Education Agencies

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EA 005 247

Utah State Board of Education
Salt Lake City, Utah
1968

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Comprehensive Planning in State Education Agencies

A Multi-State Project

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FOREWORD

The Comprehensive Planning in State Education Agencies Project (CPSEA) had its beginning in March, 1967, under the auspices of Title V, Elementary Secondary Education Act. At that time, six states and Puerto Rico were invited by the United States Office of Education to jointly undertake the task of developing alternative models for planning activities in state education agencies. In recent years, these seven agencies had lent support to the effort of comprehensive planning in education. Although unsophisticated, each agency (Colorado, Connecticut, Iowa, Puerto Rico, Texas, Utah, and West Virginia) had advanced materially along the largely obscure trail of planning in education and had shown some proclivity for and intention of leading out in this important new venture.

It was clearly the original intent of the project that the agencies involved deliberately avoid the temptation and comfort of joining together to develop a single model for planning. Rather, the focus was to develop several models that could emphasize distinctive differences, each model being designed to serve the particular needs and peculiarities of the parent state. Within the objectives of the project was the hope that a state education agency could select one or more of the models which had been developed by the pilot states and adapt its selection to its own use. This would, hopefully, aid the states in their initial planning endeavors, eliminating or greatly diminishing the need to plow new ground in the early stages of effort; avoiding the pitfalls, the dead-end streets, the unfruitful ventures; and capitalizing upon the training and expertise acquired by personnel initially engaged in the project.

To be sure, comprehensive planning in education is a vital part of the educational endeavor. Its benefits are long overdue; its promises are attainable. Education has taken a long stride toward gaining the initiative in this new field thereby averting the unfortunate circumstances of having the necessity of planning forced upon it by external groups. In this way, planning in education can be distinctively oriented to education rather than patterned after some other agency or facet of society. This is not to say that the expertise and workable procedures have been developed without assistance from outside sources or that they have ignored the long experience and demonstrable effectiveness of planning in industry and the business world. But the patterns, the thrust, and the processes have their roots in education and the potential advantages of this fact cannot be overemphasized.

Appreciation is expressed to the U.S. Office of Education for its vision and its willingness to make the initial effort. The important contributions of the participating states are gratefully acknowledged. It is sincerely desired that this volume will be of help to other educational agencies as they seek ways to meet the challenge of improving education through the effective utilization of planning technology.

T. H. Bell, Chairman
Project Policy Board

VOLUME CONTENTS*

Part I A SYNCRETIC MODEL

BERNARR S. FURSE, *Multi-State Project Director*

A union or fusion of the common elements appearing in one or more of the **models** developed by the project states.

Part II COMPREHENSIVE EDUCATIONAL PLANNING IN PUERTO RICO

EVERETT W. REIMER, *Project Coordinator*

An account of the need for educational planning, the present planning capability, and a plan for comprehensive planning – with an emphasis upon student information.

Part III A COMPREHENSIVE PLANNING PROCESS FOR THE IOWA STATE DEPARTMENT OF PUBLIC INSTRUCTION

JOSEPH WOLVEK, *Project Director*

A process to produce valid information in the form of alternative courses of action to aid in administrative decision-making.

Part IV A HANDBOOK FOR ORGANIZING AND IMPLEMENTING A COMPREHENSIVE PLANNING PROCESS FOR THE COLORADO DEPARTMENT OF EDUCATION

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A strategy to facilitate inter-office and local school district planning depicting planning as process oriented.

Part V TOWARD COMPREHENSIVE EDUCATIONAL PLANNING IN TEXAS

MARLIN L. BROCKETTE, *Project Coordinator*

A means of identifying statewide educational priorities, and the coordination of the planning endeavors of the state education agency and the regional education service centers.

Part VI A CONNECTICUT REPORT

R. DOUGLAS DOPP, *Project Director*

An interim report on the establishment of a planning unit and an organizational structure in the state education agency for the coordination and review of educational plans.

Part VII INITIATION OF PLANNING IN THE UTAH STATE EDUCATION AGENCY

DON K. RICHARDS, *Project Director*

A model that portrays a statewide comprehensive educational planning mechanism including the structural elements necessary within the agency as well as among other agencies concerned with education.

Part VIII COMPREHENSIVE EDUCATIONAL PLANNING IN WEST VIRGINIA

B. G. PAULEY, *Project Director*

The establishment of an Office of Educational Planning as a structural element to coordinate agency plans for education and to correlate the planning endeavors of other education agencies in the state.

* A separate table of contents is provided for each state report at the front of that report.

Comprehensive Planning in State Education Agencies

PART I

"A SYNCRETIC MODEL"

Written by

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Utah State Board of Education
Salt Lake City, Utah
1968

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Salt Lake City, Utah
1968

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CHAPTER 1

Educational Planning: A Matter of Urgency

BERNARR S. FURSE[*]

The dramatic pace of technological change, the extent and direction of social unrest, and the increasing burden being placed upon public education to be more effective, more efficient, and more responsive to societal and individual needs points out the urgency for a better means of effecting changes in education than has been possible in the past. This report describes a multi-state effort to develop planning mechanisms in state education agencies so that these agencies can be more effective in dealing with change. The states participating in this project recognize that planning is not new to education. Massive individual efforts have been launched in the past to deal successfully with problems confronting education at the national, regional, state, and local level. Undoubtedly many major hurdles in education have been overcome by such projects. The weakness is the failure to sustain such planning efforts on a continuous basis. This failure is particularly true of the state education agencies, whose responsibility it is to provide appropriate leadership to the state school systems. As recently as 1963, in a publication by the Council of Chief State School Officers on the legal status, function, and organization of the state department of education, there is no reference to planning as a leadership function of state departments. Only under the topic of "Supporting Services," is research challenged with ". . . providing professional and technical assistance in *planning* and developing studies and projects undertaken in program and internal administration areas."[1]

In the past, planning has been seen as a part of research or the responsibility of an *ad hoc* committee, possibly with consultant help, formed to solve a specific problem. So, while there has been planning of a sort, a continuous program for long-range comprehensive planning is still in its infancy for virtually all state education agencies. It may be granted that this deficiency exists because of the urgency of ever-present operational problems, limited financial resources, lack of trained personnel, and the availablility of usable planning tools. It must also be recognized that relatively few understand the real nature of comprehensive educational planning or accept the need for it. Although these and other factors have deterred any substantial effort to develop a planning capability in state education agencies, it is now deemed a matter of urgent priority to achieve that capability if state departments are going to provide the kind of leadership needed today and in the future.

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[*] Bernarr S. Furse, Multi-State Project Director. Formerly administrative assistant to the Utah State Superintendent of Public Instruction; served as a specialist in statistical and curriculum research for the state education agency and as research director for the Utah School Merit Study Committee.

[1] Council of Chief State School Officers: The State Department of Education, Legal Status, Functions and Organizations: Washington, D.C., revised 1963, p. 40.

TODAY'S CHANGES DEMAND BETTER PLANNING

Social Revolution

The United States is faced with another revolution, a revolution which is not merely imminent but has actually begun! Nationwide riots, acts of civil disobedience, and protest marches seem to be but symptoms of the deeply-rooted and widespread sociological disorders affecting our times. Sweeping changes in America's social institutions can be expected to occur in a relatively short time as the forces of unrest swell, join ranks, and become more purposeful. The question no longer is concerned with *whether* extensive change will occur, but *how*, and at *what cost*. It may continue violently. Or, if it is not too late to deter the forces of violence, it could come through intensive efforts for planned change. Circumstances for the nurture of nonviolent planned change are at least equal in their propitiousness to those which foster change by violence. Time, resources, and capability are the crucial factor which will determine whether or not planned change can occur rapidly enough to subdue the underlying pressures moving toward violent change.

Because of its role in sociological processes, education is in a most critical position demanding an extremely high priority for attention. In spite of this, education has been justifiably accused as being notoriously ultra-conservative in stance, slow in recognition of the need for change, and even slower in the adoption of methodological or technological changes. The time has come, however, when educators *must* recognize the high potentiality of a viable and efficient educational system to meet the needs of individual students in the context of societal demands and requirements. With that recognition, school systems must move decisively and rapidly to bring about needed educational reform.

Major methodological and technological breakthroughs are appearing on the educational scene that hold promise for removing some of the formidable obstacles that have obscured such reform in the past. However, the new teaching methods and the new technologies will have little lasting impact if they are "tacked on" to the existing system. Rather, means must be employed, cognizant of the new technologies, to design new systems to meet present needs and tomorrow's demands. To identify today's needs and to anticipate tomorrow's demands requires evaluation techniques and future forecasting methods. More important, they require a systematized approach to the search for alternative solutions to the public's requirements, hopes, and aspirations for education. The emergence of educational planning specialists and the establishment of planning mechanisms in state educational agencies are directed toward that end. Education's potential contributions to the solution of sociological problems and the avoidance of violent forms of social revolution are great; the realization of the potential contributions will come only through the search for the most acceptable of carefully developed alternative solutions and the implementation of such solutions. The search calls for a planning capability which will draw from all sources the information ideas, and resources necessary to be blended into viable plans, plans which will result in the requisite change.

FANTASTIC RATES OF CHANGE

It is difficult for the human mind to fully comprehend the rapid changes occurring in the world, or the numerous ramifications of those changes. Fabun[2] has indicated that population explosion is a dramatic example. It took from the beginning of man to 1850 A.D. to reach a population of one billion; the next billion was added in the 75 years from 1850 to 1924; the third billion in 37 years or by 1962; the fourth billion will be reached by 1975, a period of 13 years; and to add the fifth billion will take only 7 *years*, 1976-1982. This means that twenty-five percent of all the people who ever lived are living now.

Another dramatic example is the so-called knowledge explosion. Fabun states, for example, that the amount of technical information available doubles every ten years; throughout the world, about 100,000 journals are published in more than 60 languages, and the number doubles every 15 years.

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[2] Don Fabun, **The Dynamics of Change** (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1967), p. 4-5, 12.

Other equally dramatic examples of change might be cited. Undoubtedly modification in life style has been the result of such change. Urbanization, increased application of technology to living conveniences, and rapid changes in business and industry are cases in point. The prediction has been made that by 1980, when today's first graders graduate from high school, half of the workers in the United States will be in jobs that do not even exist today; people will be traveling from coast to coast in two hours in an airplane carrying seven hundred passengers; seventy-five percent of the population will be living in three megalopolitan areas; and the computer will have changed the United States as much as the automobile changed society from the horse and buggy days.[3]

NATIONAL CLIMATE FOR CHANGE

The point is that all these changes have important implications for the need for more extensive educational planning. With such a rapid rate of change, education will find it increasingly difficult to keep abreast of the changing requirements dictated by advances in other areas. Heretofore, society has had an expectation of education to hold to the traditional, to use the same educational methods and to some extent the same curriculum for the child as was provided the parent. This is no longer the expectation. Parents, well educated and used to a fast-moving technological environment are accepting change more readily and tending to look askance at institutions which do not change with the times. There are, of course, groups with differing opinions, but an increasingly large segment of society looks upon education as a primary means of social mobility, of *climbing the social ladder,* as a result of a better education leading to a better vocation. The public often seems much more receptive to changes in education than the educators who operate and control the system. The decision-makers, cognizant of the public mood, have been unable both to operate the old system and simultaneously to concentrate enough time and resources for designing and effecting a change to something better. In the meantime the public waits, although with less and less patience.

COMPETITION

The almost-monopolistic position of the public education system is being challenged today as at no other time since achieving its long-enjoyed status of prominence. The entrance of private industry into the educational realm through such programs as the Job Corps, on-the-job training for employees and private post high vocational and technical schools suggests the potential competition of a business operated school system with profit as the incentive. Private firms are springing up throughout the nation to handle contractually many educationally-related functions. Certainly the planning capability of business and industry is a major factor underlying current ventures into the post high school educational market. These trends, and others, have led a few to predict that within a few years some school districts may be contracting with private firms to operate their schools. It is conceivable that a profit-oriented private system could develop paralleling the present public and non-profit private elementary and secondary systems. Some have even gone so far as to suggest that such a movement may lead to the gradual replacement of the present educational system by private business-oriented educational agencies.

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[3] Edgar L. Morphet and Charles O. Ryan (eds.), **Prospective Changes in Society by 1980** (New York: Citation Press, 1967)

Whether or not this occurs, public educators realize that no one has all the answers. More adequate planning can help provide greater insight into current problems. It can also assist educators to consider many more of the relevant factors and it can result in operational programs which, though meeting societal and individual needs, may eliminate any threat of the dessolution of the present system.

GROWING DEMAND FOR RELEVANCE AND QUALITY IN EDUCATION

Although criticisms of current educational practices continue to grow, there is no noticeable movement to replace public eduation with a private profit system. For the most part the critics are calling for an educational system that is more relevant to the individual learner and are asking that it be of the highest quality attainable with current potentialities. Minority groups and protest groups — even those with anarchistic attitudes — perceive education as a major factor for changing those conditions they believe need changing.

The nature of the criticisms and the frequency of demands make one point quite clear, i.e., that no unilaternal, uniform program such as the college-prep program followed slavishly by most of our schools will be adequate. The educational system of the present and the emerging systems of the future must provide many more options and much greater flexibility to suit the varied requirements of clients. The sweeping changes required to bring about requisite options and flexibility can be achieved if proper leadership and planning are effected.

CRITICAL FINANCIAL PROBLEMS REQUIRE TECHNOLOGICAL PLANNING

Resistance to Increasing School Costs

In general, the American taxpayer and state legislators have felt they have been reasonably generous in providing funds for education. But as the tax bite grows ever larger, the beginnings of a taxpayer's revolt have resulted, as evidenced by increasing voter rejection of school bond issues and proposed school tax increases. If this resistance continues as it is predicted to, the past trend of making educational changes almost exclusively in the form of adding on new programs at added cost will stop. Taxpayer resistance should cause a careful reassessment of current programs and a more adequate consideration of the long-term budgetary requirements of proposed new programs before they are added. A shortage of funds may force the development and use of cost-benefit analysis techniques for education.

Legislators throughout the country are becoming more conservative in appropriating additional funds for education when the results therefrom either are not identifiable or do not appear to justify the amount of expenditure. Increasing competition for the tax dollar portends a critical reality which educators must be willing to face. Clearly, it will become increasingly difficult to obtain additional appropriations from congress and state legislatures without providing measurable objectives for which the money will be spent. Legislators want to be shown evidence that the money they appropriated produced the desired results. It is incumbent upon the educational establishment to develop and adapt the tools of operations analysis to educational management. The present state of the art does not permit such measures to be used with any assurance that the results from their use will be precise or that the product being measured was in fact the result alone of such and such a program. While initial attempts to use such techniques as cost-benefit analysis are bound to be feeble and fraught with technological weaknesses, progress will come from attempts to use these techniques and from failures as well as from successes. Neither personnel with the necessary skills nor the development of the necessary tools will result if no attempt in their use is made. Adequate planning provides for built-in safeguards to assure selection of only the most promising alternatives. For example, implications of alternative courses of action could be tested prior to their use in the school system. A computer simulation of the school system could be used to determine the possible results of different courses of action, which ones are consistent and feasible and which are inconsistent, or for other reasons are not feasible. Further, new programs must be field tested in pilot situations before attempts are made to put such programs into general usage.

MODERN DEVELOPMENTS PROVIDE SOLUTION VEHICLES AND RESOURCES

ADVANCES IN PLANNING TECHNOLOGY

Despite the shortcoming just mentioned, the past decade has seen the development to a high degree of numerous planning and management tools in government, business, and industry. Recently various groups have worked for their adaptation and application to the problems of education. These tools can be either used or ignored, but, with the dire need for planned change in education, it is certain they cannot be ignored with impunity. Their widespread use in business and industry, and in government at federal and state levels has demonstrated their worth in these areas. Educators who recently have begun to utilize some of the techniques are finding a potential value in these tools for bringing about desired change and improvement. Examples of specific planning tools now available – although some are in early developmental stages – include the system approach, planning-programming-budgeting system (PPBS), modeling and simulation, program evaluation and review techniques (PERT), critical path method (CPM), cost/benefit analysis, needs assessment, and an assortment of future forecasting techniques. (Many of these tools will receive mention in various parts of this volume.)

The extent of the effort necessary for further refinement and adaptation of these new technologies is probably beyond the means of any one state. Therefore, the continued effort and support of the federal government will be necessary if these tools are to become fully usable as educational management and planning technologies.

Central to the new planning technology is the careful formulation of objectives and the establishment of a priority order for acting upon them, the stipulation of product performance specifications by which achievement of the objectives can be measured, and the analysis and selection of alternative means for meeting the objectives.

COMPONENTS OF THE NEW EDUCATION

Although education generally is falling short of current demands upon it, enough elements of change – some already demonstrated and others now emerging – exist to make sweeping and revolutionary changes both possible and feasible. These components often exist in comparative isolation, while those changes which do occur are usually relatively minor and made on the basis of one or two at a time. Yet, if it were possible to bring all the available bits and pieces together through planning, it is conceivable that the educational system and process could be completely redesigned. If, for example, meeting specific educational needs of each student is the major focus of education, the flexibility permitted by recent developments makes possible such individualization. Available administrative procedures include such possibilities as flexible scheduling, varied patterns of grouping, including planned independent study, multiple staff utilization patterns, and non-gradedness. Instructional means include almost unbelievable quantities and varieties of media, such as programmed instruction, instructional systems, audiovisual equipment and materials, and self-instructional equipment and materials. Available instructional strategies provide the possibility for each student to learn at his own pace in some form of continuous progress program. Curricular content is being critically reviewed to determine its relevance to the real needs of the students in the context of societal requirements. Facilities are being designed and constructed for flexibility and for individualization. Guidance and assessment systems are being developed, often with the aid of computers, to analyze specific learning needs of individual students. Specific learning disabilities and other educational handicaps are being met and their deleterious effects eliminated or diminished to an extent never before reached.

The availability of these and many other advances in educational methods and technologies to support the new methods lends feasibility to a depth and quality of educational planning never available heretofore. If the potential of their value is to be realized, it will be done *only* through a careful reappraisal of the educational system in whole and in part. A comprehensive planning capability can be the vehicle for such a task.

CONCLUSION

In the past, a high degree of philosophical acceptance has accompanied the relatively piecemeal, haphazard, and ineffective approaches to planning conducted in the educational establishment. Now, in spite of any resistance which may occur or of any wistful wishing for the "good old days," pressures of the times are demanding that educators do the kind of planning which will meet *today's* needs squarely and effectively, and the demand is framed in a context that brooks no failure. There is every indication that failure to respond rapidly and successfully to current challenges may mean that the problems now faced will rapidly increase in their seriousness.

CHAPTER 2

The Seven-State Project

PRELUDE

"Cutting-edge" educational leaders at state and federal levels have become increasingly aware in recent years of the need for improving the planning capabilities of state education agencies. When ESEA Title V provided funds for strengthening state education agencies, an early step was the approval of a multi-state project titled, "Designing Education for the Future," which became operational in December 1965 under the directorship of Dr. Edgar L. Morphet. Directly involved with the basic idea of statewide planning, this project was designed "to assist each of the participating states to anticipate the changes that are likely to take place . . . during the next ten to fifteen years, and to plan and implement changes and improvements that should be made in the educational organization and program during that period."[4]

Numerous recommendations coming from the eight-state project "Designing Education for the Future" have pointed to the need for taking specific action to improve state education agency planning capability. Haskew, for example, drew from predictions of societal change the following implication in terms of planning:

> All states definitely need to provide for the establishment and support of ways and means to conduct continuously the planning function as a vital element in their organization for education. Prospective changes in society reinforce the necessity of developing — for the management of education — professional level competence in the discipline of planning.[5]

A PROJECT FOR DEVELOPING SEA PLANNING MODELS

As a result of the accumulating evidence and opinions from many sources regarding the need for state education agencies to improve their planning capability, several state agencies joined together to look at the agency's role in educational planning. Under the provisions of Section 505 of ESEA Title V, a proposal was submitted to USOE for a multi-state project which would (1) permit each participating state education agency to improve its present planning capability, and (2) encourage the development of several planning models for state education agencies. In addition to the values for the states involved, the project was intended to provide examples from which other states could select ideas for their own use. States were invited to participate in the project on the basis of current interest and capability in educational planning. Some entered the project with a planning capability which, although not highly sophisticated, did bring them to a desirable point of readiness for achieving the project's purposes. The commonwealth of Puerto Rico, however, brought to the project a rather sophisticated capability in specialized planning technology with a formalized office of "Planning and Educational Development." Along with Puerto Rico, Colorado, Connecticut, Iowa, Texas, Utah, and West Virginia were invited to participate with Utah as the state to administer the project. The project was approved to operate from March 1, 1967, through June 30, 1968.

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[4] Edgar L. Morphet and Charles O. Ryan (eds.), **Prospective Changes in Society by 1980.** (New York: Citation Press, 1967), p. 2.

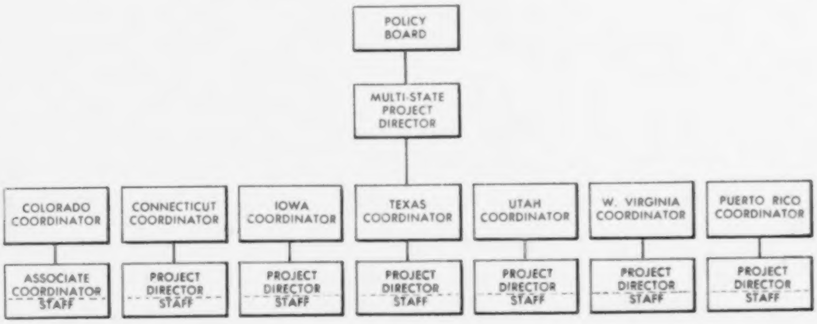
[5] Lawrence D. Haskew, **"Another Perspective," Implementations for Education of Prospective Changes in Society**, eds. Edgar L. Morphet and Charles O. Ryan. (New York: Citation Press, 1967), p. 29-30.

Project Organization

Office space for the headquarters for the multi-state project was provided in the Utah State Board of Education offices in Salt Lake City, Utah. Figure #1 illustrates the organizational structure for the project. Each participating state appointed a coordinator to the project. The coordinator in most cases was the deputy superintendent or other officer whose responsibilities included planning. In most instances, a state project director was

FIGURE No. 1

ORGANIZATION OF THE PROJECT



employed and participating states were encouraged to employ up to two assistants. The policy board was composed of the chief state school officer from each of the participating states. This board selected the multi-state project director and approved the policies which guided staff members in the conduct of the project. Several coordinators' meetings, as well as meetings of the total project staff, were held to coordinate, where desirable, activities of the project states.

PRIMARY OBJECTIVE

In a paper discussing the project and its purposes, the project director pointed out that the project's

> primary objective is the development of a comprehensive, integrated planning technique and mechanism for state education agencies. It is anticipated that several models will be developed. The models will probably be designed around a corps of planning specialists with a single function, that of developing plans for effecting desired educational change. The models must depict a means to achieve maximum utilization of all resources as aids to educational planning. But more important, the models must assist us in developing a means whereby educational planning can be institutionalized to become an integral part of educational administration at every level.[6]

GOALS AND ASSUMPTIONS

In more detail the major goals of the project, as established by the policy board, have been to:

1. Develop and demonstrate alternative models for building effective educational planning programs in state educational agencies.
2. Demonstrate to the states the importance of comprehensive educational planning.
3. Develop recommended procedures for the adaptation of a model comprehensive program by a state educational agency.

Important assumptions underlying these goals include the following:

1. The Nature and Scope of Comprehensive Educational Planning:

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[6] Bernarr S. Furse, "Developing State Education Agency Capability for Comprehensive Planning" (multilithed paper, September 1967), p. 5.

a. Educational planning is broad and comprehensive. It is not simply a "project" which is concerned with the smallest unit of development activity and it is broader than a "program." It is more encompassing than educational "reform" which usually embraces only a phase or some phases of the school system and is concerned with merely setting out goals. Educational planning should involve the entire educational matrix, vertically, horizontally, public, private, formal, and informal. It should include general education, vocational education, professional education, special and adult education, as well as all the educational influences, i.e., radio, television, the theatre, industrial educational programs, and many others. It should also be broad and comprehensive geographically in that it involves the entire state and coordinates, where practical, on a regional bases. It can include school administration, school plant, organization, school finance, curriculum, instructional methods, and other areas. It can involve the development of long-range goals and objectives as well as the proposed utilization of human and material resources to accomplish such goals.

   It should be all encompassing, but the planning function does not include duplication of efforts of other disciplines in education such as research, evaluation, and the collection, processing, and analysis of statistical data. It draws upon all of these resources as inputs for the planning function, encouraging the rapid development of the basic support endeavors necessary for adequate planning.

b. Planning involves the conscious selection of goals, the analysis of these goals from the standpoint of the wishes, needs, and resources of the community, with reference to the mutual capability, their order of priority, their implications, probable consequences, and the selection of the most efficient and acceptable means for attaining them.

c. Planning is a continuous long-range activity.

2. Role of the State Educational Agency in Comprehensive Educational Planning:

a. The state department of education should be the leadership center of the state system of education, contributing significantly to the improvement of state and local education programs, and having the resources in each of its programs needed to provide leadership throughout the state. Comprehensive educational planning is a critical component of these leadership activities.

b. The state department of education should provide leadership in coordinating educational planning with other governmental state planning efforts. Because of the need for efficient and effective utilization of all resources affecting the development of an area, state, or region, comprehensive planning should place heavy emphasis on the coordination of functional planning activities conducted by the various planning agencies having significant impact on social, economic, and physical development.

c. Many state, federal, and private agencies are concerned with and contribute significantly to the state's educational programs. The state department of education staff should work harmoniously and cooperatively with all such agencies.

d. Close and effective liaison and coordination with other agencies and instrumentalities of the government which can contribute to educational planning or will be involved at some stage in the preparation and implementation of the educational plan is highly essential and must be established as an integral part of the planning machinery.

e. The state department of education should recognize that in areas of joint concern, services primarily educational in nature should be provided by the state department of education and that services chiefly noneducational should be provided by other agencies. The state department of education should be responsible for developing procedures and establishing cooperative relationships to guide noneducational agencies of the state system of education. The same spirit of cooperation and coordination should exist between the state department of education and professional education associations and other voluntary groups concerned with the improvement of education.

f. Broad cooperative participation of representative groups and individuals should characterize statewide planning. While the leadership may be exercised by the education department, the participation of organizations, associations, voluntary groups, individuals, industry, and other governmental agencies that can contribute to the success of such planning and of its future implementation is necessary.

g. The state education agency should coordinate federally sponsored educational programs with the educational programs within the state.

h. Local initiative and responsibility should be encouraged and stimulated. State department services should supplement rather than supplant local planning.

STATE ASPECTS OF THE PROJECT

The essential element of each state's participation in the multi-state project was the further development of the education agency's specialized planning capability. This meant the development or employment of professional personnel as a planning staff. As a part of the project, staff members were exposed in training sessions to emerging technological tools for planners. In addition, operational procedures, relationships within and outside the agency, and other requisite elements for planning were considered, were combined into a planning model and, where possible, implemented.

Secondary to the actual development and implementation of models for comprehensive educational planning was the necessity for reporting the model thus produced. Such reports not only provide the grist for evaluating the project's effectiveness, but, more important, they provide the basis for the diffusion of the strategies for planning which have been developed or identified by the project. It is hoped that the following reports will encourage other states to recognize the need for developing a comprehensive planning capability and perhaps provide a basis for initial efforts in this regard.

ORGANIZATION OF THE FINAL REPORT

Parts II through VIII of this volume contain the reports describing each of the seven state models for planning produced by project staff and personnel of participating state educational agencies. It was anticipated from the beginning that each state's model would vary considerably from those developed in other states, and the reports themselves confirm that such has been the case. It is hoped that states not participating in the project may find one plan among the several which approximate their own needs and which, with some modification, can be adapted for their own use. Or, more likely, they may take an eclectic approach and select specific elements from several of the models to incorporate into a plan uniquely designed for meeting their specific planning needs and organizational configurations.

Such an eclectic approach has been taken in part for the model presented in the remaining chapters of Part I. The "Syncretic Model," chapters III through VIII includes many elements or strategies for planning gleaned from an exposure to the several states in this project by the multi-state project director. While the "Syncretic Model" has not been endorsed by the participating states individually or collectively, it is in a sense a summarization of the multi-state project in the form of a composite model.

The reader is cautioned that effective planning will not necessarily follow even if all elements or strategies in the model are instituted. Educational planning requires more than organization, structure, and endorsement. It requires the proper acceptance on the part of all who are influenced directly by the planning function; it requires individual competencies not yet generally available to education; and it requires further refinement and adaptation of planning tools now only in limited use outside of big business, industry, and the federal government.

As a further caution, the reader is directed to the following quotation taken from a letter from Everett W. Reimer, Coordinator of the Comprehensive Planning project for Puerto Rico. Coordinator Reimer in writing his critique of a draft of the "Syncretic Model" stated:

> ". . . These technologies of system analysis, programming-planning-budgeting system, and most of the others to which you refer, originally were designed to explain the relationships between physical processes, either military or physical production processes. In such processes causal sequence and the relationship of one sub-process to another is quite explicit. Quite the opposite is true in education. We do not know how learning occurs nor even much about the conditions under which it occurs, especially in the classroom. Much of what takes place in educational institutions, especially in students' minds, is only marginally under anyone's control and is, therefore, difficult to predict and to epitomize. Systems analysis and other general purpose technologies will undoubtedly prove applicable to education, but making useful applications

> will take considerable time and highly specialized effort. Before they can become useful, these technologies will have to be converted from general purpose technologies into specialized versions specifically adapted to education. Take, for example, T. W. Schultz's calculations of economic returns to education. The basic technique is a general tool of economic analysis, but until Schultz adapted it, this tool had no value for educational planning. Its adaptation, as Ribich's and Becker's studies show, is also a long way from being completed. It is even probable that Schultz and Carnoy's initial findings are misleading, in some of their implications, as recent British findings suggest. An almost parallel statement could be made about manpower analysis, which is merely a specialized version of social role analysis; and yet it must be obvious that without valid techniques for determining the incidence and educational implications of various social roles, it will be difficult to establish a rational link between school and society. Not evaluation in general, but the identification and valid measurement of specific educational products; not cost accounting in general but the identification and costing of specific critical inputs to the educational process; are required for educational planning. If organization for educational planning gets very far ahead of the development of validated educational planning technologies, there is a great risk that planning investments will be lost, and even worse, that educational planning will be discredited and unnecessarily set back.
>
> This is not to say that organization for educational planning should not be given priority as your draft chapter suggests. I believe that it should because I believe, as you do, that useful technology will develop largely out of attempts to solve actual educational planning problems. . . ."

Educational planning is not a panacea, nor will it provide some kind of magic formula to erase, overcome, or forestal the increasing complexity of the problems confronting education. Dimly cognizant of many of the known hazards and with a greater concern for the many that are unknown or at least not fully evident at this time, the author is compelled to urge state education agencies to move ahead in efforts to establish an agency-wide, systemwide planning capability to better prepare for tomorrow.

CHAPTER 3

Basic Elements in Project States' Planning Models

Anyone who reads or even skims the reports in this volume describing state models for comprehensive educational planning will readily recognize the considerable differences which exist. One is tempted to feel there should be an optimum pattern for planning and that the seven models described could be expected to be more similar if each achieved what it should in approaching that optimum. Careful and serious reflection, however, brings one to the conclusion that diversity in the models is not only to be expected but also desired. Hansen affirms that,

> A clear-cut, fixed, comprehensive and clearly sequential formula for planning might seem to be required and desirable. Even if it were possible to devise such a formula — and that is very doubtful — it would not be universally applicable to the needs of all the states. There is no one system or single model of planning that makes sense wherever or however applied. But there are some key issues and concrete suggestions that do make good sense in all planning efforts.[7]

Despite differences in the models, it is possible to identify certain principles and features common to all or to most. Major commonalitites include: (1) recognition of the need for an improved scope and quality of planning — specifically, that such planning be comprehensive, state-wide, long-range, and systematic; (2) specific organizational arrangements to enable and facilitate planning, providing for a decision-making function, a specialized planning unit, coordination of agency planning, and liaison with external groups; (3) a planning strategy which delineates operational guidelines; (4) training in planning technologies; and (5) an information system for planning.

Each of these features of planning capability is considered briefly in the remaining sections of this chapter, somewhat as a prologue to the details in the chapters following.

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[7] Kenneth H. Hansen, "Planning for Educational Change: A Statewide Approach," (multilithed paper, 1968), p. 3.

SCOPE AND QUALITY OF PLANNING

It should not be necessary to develop a rationale for better planning in education; that point should be entirely self-evident. There has, in fact, been a great deal spoken and written about good, careful planning in education. Yet educational planning has tended, with some notable exceptions, to be sporadic in nature, uncoordinated, and usually not comprehensive. Entire professions for planning, often highly rewarding professions, have long existed to precede and undergird the activities in fields other than education. Architects design our homes and buildings; engineers plan various other structures, develop means of traffic control, and plan myriads of other marvels; top military planners and strategists become the generals who plot the movements of men and equipment and planning agencies, are utilized by many agencies of federal and state government. In these and other fields, personnel trained in highly specialized skills spend their full time in planning. In education, *everyone* has been charged with planning; consequently, no one has had the time or the skill to plan adequately.

Comprehensive educational planning is here proposed as the means for rectifying this deficiency and for providing a level of planning in education — pertinent and relevant to the human resources with which education deals — comparing favorably in its adequacy to that in other fields. Utilizing the latest technological advances is requisite to making that planning of the highest quality presently attainable. It is this rationale, i.e., the importance of developing a high-quality, technologically-based planning capability, applied to state education agencies, which underlies all else contained in this volume. Briefly, the basic elements necessary to attain that quality include the following aspects of planning.

Comprehensive Planning

Not only is it important to identify and appropriately consider as many as possible of the factors which may affect selecting and developing a solution for a given problem, but all agencies, organizations, and, where feasible, individuals, affected by or offering potential solution resources for that problem should participate in developing its solution (see glossary).

Statewide Planning

The compartmentalization of education in virtually all its dimensions has proceeded to a ridiculous extreme, and that includes the area of educational planning. Much of the planning which is done, even that done relatively well, is of a patchwork relatively haphazard, and/or piecemeal nature. A broader, more comprehensive frame of reference needs to be developed. Good curriculum development, for example, must be done within the framework of an overall curriculum paradigm. Similarly, it is not the small pieces of large problems which need our best efforts for solution; rather, it is the large problems themselves which first need solution in order to provide the framework and guidelines for lesser parts. Educators need to consider, and be ready to implement, sweeping changes rather than tiny relatively insignificant ones.

A new approach is needed, one which takes care of the important problems *first*, establishes the framework or guidelines, and relegates minor problems to an appropriate secondary place. Only through a bold effort on a coordinated state-wide basis, using a comprehensive planning approach can significant change be effected. The beginning point should be the development of a state education agency planning capability. A planning unit should be the heart of the planning mechanism.

Long-Range Planning

Planning should not be limited to reactions to immediate problems, to an expediency or "brush-fire" planning. Instead, new and emerging technologies should be utilized to project planning into the future to whatever extent is both possible and feasible for the planners involved. Long-range planning can provide control and direction to the future instead of leaving that future to chance combinations of circumstance. While recognizing that chance may affect the future fortuitously, more often it leaves those who depend upon it reacting on a level of desperation.

Systematic Planning

Effective principles utilized by planners through the ages have been identified and systematized to provide common referents and to insure more thorough planning efforts. Essentially, this is what the modern planning technology is all about. The intent is to provide the tools by which all factors related to the solution of a given problem can be adequately taken into account in achieving that solution. In addition, the use of systematic planning technology provides for — almost forces — a more creative approach to the solution process.

ORGANIZING FOR PLANNING

New elements, new configurations, and new operational guidelines are requisite to the kind of planning described briefly in the preceding section. Initially, relatively minor modifications of existing structure may be adequate to enable and facilitate the specialized planning function; eventually, more thorough changes may be required. Some of the essential elements are noted briefly here.

DECISION-MAKING FUNCTION

Planning must be closely tied to decision makers at all levels. There is little virtue in planning which does not result in action, and the bridge between the two is made by those who can mandate action. Some suggestions for integrating decision makers into the total planning function will be described later.

SPECIALIZED PLANNING UNIT

All the models reported herein utilize a planning unit, composed of personnel with technological planning skills, as a major element of the model. Actually, such a unit occupies the role both of a catalyst and of a feasibility factor in achieving the extensive, systematic planning which has been proposed. Specific purposes and responsibilities of the unit may vary somewhat from state to state, but the central idea in all cases involves the development and utilization of planning specialists. The units so established usually coordinate or perform certain aspects of planning, provide technical assistance to others in their planning activities, and provide training in planning technologies. Numbers, individual qualifications, and configurations of staffing vary, depending largely upon the specific role seen for the unit. Even the title of the unit varies with perceptions of its functions, as does also its position in the organizational structure.

COORDINATION OF AGENCY PLANNING

Planning undergirds, or should, all educational activities at all levels, including those functions in which the state educational agency participates. Technology-based planning should be regarded as an integral function, permeating and essential to all programs, projects, and other activities. Once this orientation has been accepted, the necessity for effective planning liason between all organizational divisions within the agency is clearly recognizable. Most of the models developed by the states in this project indicate this need, although each has developed somewhat different solutions to the problem, including special councils, task forces comprised of personnel from more than one division and other vehicles.

EDUCATIONAL LIASON WITHIN THE STATE

The trend in education toward compartmentalization has resulted in a proliferation of agencies and organizations having responsibility for different aspects of education within a state. Most states do not have, for example, one central agency with responsibility for all the levels and functions of education in that state. For the achievement of comprehensive, statewide planning it is essential and imperative that the interested agencies be drawn together in the planning processes. The need for statewide educational liason extends also to intermediate and local education agencies, educationally-related professional groups, business and industry, relevant community segments, and to parents and students. Most of the state models in this report have recognized this need and developed mechanisms, adapted to the state's unique circumstances, for meeting it.

INTERGOVERNMENTAL PLANNING COORDINATION

Education does not operate in a vacuum, nor can its interests and activities be completely separated from the interests and activities of other departments of government. There is considerable overlapping between education and agencies involved with such functions. For example, those related to health, welfare, and law enforcement. Not only must state education agency coorelate planning within its own realm, but it must play an active role in articulating its functions with other agencies' having related responsibilities. In some cases, a state planning agency has already been established which either has or can undertake the coordination of planning between departments of government; state education agencies should be neither shy nor reticent in wholehearted attempts at such cooperation. Benefits are more likely to accrue from such cooperation not only to individual governmental departments but also to the totality of state government.

LIAISON WITH OTHER STATES AND THE USOE

Several projects, including the ESEA Title IV Regional Laboratories, Designing Education for the Future — an eight-state project, and Comprehensive Planning In State Education Agencies — a seven-state project, have demonstrated in recent years both real and potential values of interstate cooperative planning. Even a simple sharing of ideas can be extremely beneficial. Combining of resources to solve common problems can yield even greater dividends, as it often has both in other fields and on other organizational levels. With the increasing influence of the U.S. Office of Education, it also appears imperative that mechanisms be developed for cooperative planning between the states and that office.

PLANNING STRATEGY: GUIDELINES FOR OPERATION

If the mechanisms established for planning are to achieve their purposes, procedures must be outlined in all the detail necessary to insure successful functioning. These operational guidelines must describe what each element in the planning structure is to do, and how it will relate to and work with each of the other elements. Requisite procedures at all levels and for all phases of planning will be included.

TRAINING IN PLANNING TECHNOLOGIES

The key to the successful development and utilization of agency planning capability is the application of available planning technologies. For the sake of having common language referents and because every professional in the agency should be a planner, all staff members should eventually receive training in at least the basic application of the system approach. Planning unit specialists should be trained in depth in the system aproach and in additional technologies; as new technologies emerge, these personnel should keep fully abreast of them and capable in their use. Certain other members of the agency may also need specialized training in selected planning technologies.

AN INFORMATION SYSTEM FOR PLANNING

Information is crucial to planning, or, put another way, the quality of planning outputs will vary in direct proportion to the quality and scope of the informational inputs. Planning capability is not complete without a system which provides the required information in the form, and at the time needed. At the present time several projects are involved with the development of a framework for a management information system for education. This topic is beyond the scope of this work. Such a system is critical to the success of planning functions.

The following chapters lay out a generalized model for comprehensive educational planning, drawn largely from elements of the seven state reports and developing in greater detail the principles and elements summarized in this chapter.

CHAPTER 4

An Organizational Context For Planning

THE MINIMAL ROLE OF THE S.E.A. IN PLANNING

A distinction should be made between the technical planning responsibilities of a state education agency and its potential leadership role. At minimum, the agency should be involved with the central state planning mechanism as its *technical planning arm.* That is, the state education agency should be involved in making studies and evaluations of education – cooperatively with other agencies responsible for education, in clarifying statewide educational objectives, and in posing and examining alternative strategies for attaining objectives. The leadership tasks involved in identifying goals, in setting priorities among goals to be pursued, and in reconciling competing needs among educational agencies, should be of concern to the state education agency. However, in many states the agency may not have the authority for these tasks.

One can see no less than two principal roles in educational planning for the state education agency. These are:

1. To serve as the *technical planning arm* of the state planning mechanism, and
2. To provide essential leadership and *planning assistance services* to local and to other state educational agencies.

The broader leadership role to which some state education agencies may aspire will have to be earned in some states on the basis of its capacity for leadership. In any event, effective performance as a helpful planning assistant can add materially to the leadership potential of the state agency, hence, should be considered to be the minimal role.

CHARACTERISTICS OF AN APPROPRIATE PLANNING MECHANISM

The complexities and proprieties involved in statewide planning are evidently so great that any standardized approach to such planning in the states would be inappropriate. The mechanisms to be employed in planning should best be determined by the states themselves because of the varied organizational, political, and legal circumstances among the several states. The problems to be faced, for example, include the following:

1. The government boards of public elementary and secondary education and for higher education are separate in most states, hence a comprehensive plan of educational development cannot be produced by a single agency. In some states, the situation is further complicated by a separate authority for vocational education.
2. The role of the state education agency as planner or as planning assistant is not widely accepted or practiced, although that agency remains the most logical one to conduct or supervise statewide educational planning.
3. Systematic and comprehensive planning at the state level is not highly valued in many states. As a result of the agreed upon delegation of administrative authority to local school districts, there is a reluctance on the part of the state education agency to "interfere" with the prerogatives of local districts to do their own planning.

Despite the difficulties, resources must be found to achieve the following objectives:

1. Establish an appropriate mechanism in each state that enables it to plan systematically and comprehensively for educational development
2. Introduce into that mechanism an appropriate technical component that will enable its planning to be based upon systematic and valid study and evaluation of education
3. Relate the mechanism appropriately with action agencies – most specifically the state legislature and executive department so that statewide, comprehensive plans may be translated into new action programs and mandated by those agencies
4. Relate the planning mechanism appropriately with other educational institutions -- specifically, colleges and universities, local school districts, and the private sector of education – thereby to influence the future planning of their respective action programs

GENERAL OBJECTIVES FOR A PLANNING MECHANISM

To be effective, the planning mechanisms which are established should have the capacity to:

1. *Elict inputs* from all relevant constituent elements within the state.
2. *Assimilate* appropriate inputs into an integral whole, and to specify goals, priorities, and objectives of the planning.
3. *Translate* these goals, priorities and objectives into alternative courses of action, based upon technical study and evaluation.
4. *Feed back* alternatives to constituent elements for reaction and further input.
5. *Mediate* reactions as advantages and disadvantages.
6. *Decide* on appropriate, achievable, and defensible comprehensive plans for statewide educational improvement.
7. *Advocate* acceptance of plans by responsible agencies and institutions.

Several choices are open to the states in the selection or creation of an appropriate planning mechanism. Among these are:

1. The state education agency may assume responsibility for or may be designated as the sole planning body for all aspects of education. The agency should not conduct all aspects of statewide planning without broad and intensive involvement of the educational community.
2. A planning council (or commission) may be created – by legislative or executive action – with representation from the major sectors of education, as for example: the state education agency, a state commission on higher education, and the state board of vocational education. In addition, each of these sectors could have its own technical planning capability.
3. A state planning commission (such as that required to qualify under the federal housing and Urban Development Act which provides funds for state planning) may be elected or created to coordinate statewide educational planning, and to assimilate educational plans into a total, comprehensive state development plan.
4. A citizens' committee may be appointed to establish broad educational goals, and to reconcile the needs of different

educational agencies and institutions. Regularly authorized administrative bodies could serve the technical planning needs of such a citizens' goal setting committee.

5. The state legislature may retain to itself the right to formulate plans. Recommendations may be sought for each responsible sector of education.
6. An eclectic or syncretic approach may utilize elements from all of the above as well as additional ones not included here.

Each of the choices above presents a different set of problems to be resolved in effecting a statewide, comprehensive educational planning mechanism. For this reason, state education agencies should move ahead to develop a planning strategy that can be demonstrated to be feasible and potentially effective. Advance preparation may be the factor that determines which agency, or combination of agencies, will receive responsibility for statewide educational planning.

ESTABLISHING A PLANNING CAPABILITY

Comprehensive statewide educational planning can only be achieved if organizational patterns are established which clearly take cognizance of the overriding importance of planning and provide the means by which planning functions will be promoted and facilitated. Although the products of planning may eventually lead to extensive restructuring of state educational agencies, most S.E.A.'s can move into statewide planning quite effectively with relatively minor organizational modifications. Yet, it should be noted that only when everyone involved clearly understands and accepts the central underlying relationship of the planning function to *all* other activities will planning be placed in its proper organizational context.

The following suggestions provide one way in which the planning function can be initiated.

STRUCTURAL ELEMENTS FOR AN AGENCY PLANNING MECHANISM

Planning Unit

The basic organizational element for developing a specialized planning capability is a planning unit staffed by personnel with expertise in planning technologies. This requirement is based primarily on 1) a strong belief that planning technology is really the factor which makes possible significant improvements in the quality of planning, and 2) that competent comprehensive planning activities can be accomplished only by specialists who have planning as their primary assignment. Experience has shown that the assignment of planning as a part-time activity will sooner or later result in little or no planning being accomplished. The harsh demands of operational problems on the time of program personnel precludes priority being given to the planning function. If true, it is certainly unrealistic to expect a substantial allocation of the time of program personnel to gain expertise in planning skills for carrying out technological aspects of planning. This does not mean that program personnel should not be involved in planning. To the contrary, a high reliance must be placed upon the program specialist working with the planners for the development of new programs.

The specific nature of the planning unit and its position in the organizational structure depends largely on the degree of importance attached to the planning function and the functional role assigned to the unit. Consensus among those who have written on the topic clearly points to the desirability of the planning unit occupying a position immediately under the chief state school officer and equal to other top level divisions of the agency.[8] Figure #2 portrays this relationship. In the illustration, "office" is used arbitrarily as designating the major organizational elements and "division" is used for the next organizational level. The administrator of the office of planning (planning unit) commissioner or assistant superintendent. Rationale favoring this placement includes such points as 1) the basic importance of effective planning as a major element – perhaps the most important element – of the agency's overall leadership function, 2) the facilitation of planning relationships, and 3) the facilitation of task force formation for planning purposes, when those task forces cut across intraagency division lines in their utilization of personnel and other resources.

The planning unit functions essentially as a catalyst to stimulate technology-based planning and as a facilitator in providing assistance to the planning activities which are undertaken. In achieving these objectives, the planning unit will coordinate planning, provide training in planning technology, conduct certain technological aspects of planning, provide technical assistance to agency staff involved in planning and organize task forces for specific planning assignments. While the specific nature of the planning unit will be more fully discussed in Chapter 6, it should be pointed out here that the planning unit should not be expected to do all the planning for the agency. Huefner has placed the central planning unit in an appropriate perspective, declaring that:

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[8] For example:

C. O. Fitzwater, **State School System Development: Patterns and Trends** (Denver: Education Commission of the States, 1968), p. 59.

Theodore Albers, "Supplementary Statement," **Planning and Effecting Needed Changes in Education,** ed. by Edgar L. Morphet and Charles O. Ryan (New York: Citation Press, 1967), p. 198.

William H. Roe, "The State Education Agency of the Future: A Preview," **Planning and Effecting Needed Changes in Education,** Morphet and Ryan, p. 250.

> A centralized planning effort, which can take a broad overview of the many interests involved and which is least likely to be biased toward a particular program, may appear to be the judicious approach to comprehensive planning which is expected to coordinate various programs. But two serious problems develop if this inclination toward centralization is not restrained.
>
> First, *it is unrealistic to expect a central staff to match the specialized knowledge of the various program staffs*. . . .
>
> The second consideration is that *program staffs cannot be expected to properly implement a plan which they do not understand and appreciate*. Even if the central staff could understand the program details better than the program staff, the program staff would not believe it. Because involvement leads to commitment, agency understanding and appreciation of the plan depends upon participation in the preparation of the plan and in the compromises which are necessary between competing interests.
>
> The preparation of the plan, therefore, requires much greater decentralization than has usually been the case. *The staffs responsible for executing various elements of the comprehensive plans should be given the responsibility for proposing the plans for their programs*. The responsibility of the central planning staff is to set the basic guidelines for such planning; review and direct adjustment of the parts of the plan to insure their mutual compatibility; review the parts of plans for quality of planning technique and achievement of basic goals; and – if the plans are found wanting in these respects – to direct refinement, if possible, by the program staffs concerned but, if necessary, by the central staff.
>
> For the very reasons that planning should use program staffs, major dependence upon consultant staffing should be avoided. . . .[9]

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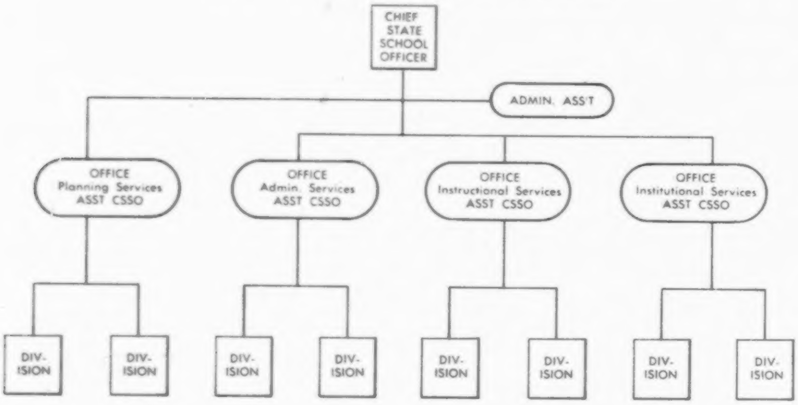
[9] Robert P. Huefner, "Strategies and Procedures in State and Local Planning," **Planning and Effecting Needed Changes in Education**, eds. Morphet and Ryan, (New York: Citation Press, 1967), p. 21.

BOARD OF EDUCATION

The State Board of Education, through its policy-setting role, plays an important part in planning. Decision-making and problem-solving which must be carried out by the Board will be improved and facilitated through assistance provided by planning technologists. Figure #2 illustrates a simplified representation of a state education agency as it may be effected to include a planning office directly under the chief state school officer.

FIGURE No. 2

ORGANIZATIONAL CHART OF STATE EDUCATION AGENCY WITH AN OFFICE OF PLANNING SERVICES


CHIEF STATE SCHOOL OFFICER
ADMIN. ASS'T
OFFICE Planning Services ASST CSSO
OFFICE Admin. Services ASST CSSO
OFFICE Instructional Services ASST CSSO
OFFICE Institutional Services ASST CSSO
DIV-ISION
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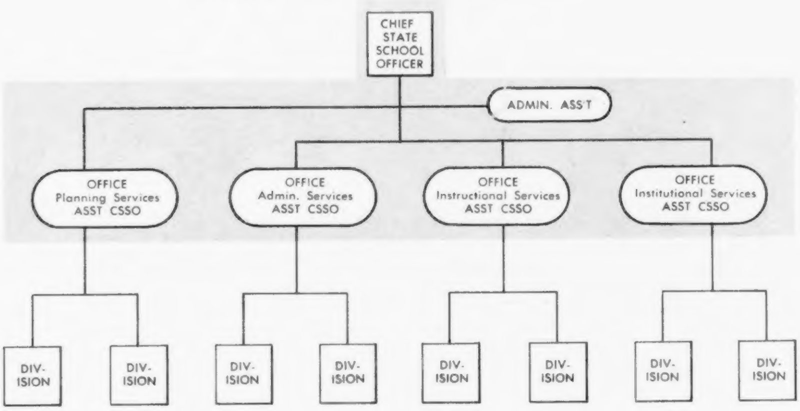
EXECUTIVE COUNCIL

Within the policy framework established by the Board, planning decisions should be made by an Executive Council composed of the Superintendent, Associate Superintendent, and/or Assistant Superintendents. An Administrative Assistant may be designated to serve as Executive Secretary to the Council to prepare agenda, and perform other similar activities (see Figure #3). Under this arrangement, all divisions and subdivisions of the agency are represented through their top-level administrators. The chief state school officers serves as chairman, with decisions based on concensus rather than on voting. Essentially, this group takes action on recommendations which come to it through the Planning Council, with affirmative decisions constituting a commitment of resources as well as an approval of plans. Planning activities upon which decisions are based will have been completed in all necessary detail when recommendations reach the Executive Council. Chapter 5 contains a more complete description of the specific processes and procedures involved.

FIGURE No. 3

SEA ORGANIZATIONAL CHART
DEPICTING THE EXECUTIVE COMMITTEE (PLANNING)


CHIEF STATE SCHOOL OFFICER
ADMIN. ASS'T
OFFICE Planning Services ASST CSSO
OFFICE Admin. Services ASST CSSO
OFFICE Instructional Services ASST CSSO
OFFICE Institutional Services ASST CSSO
DIV-ISION
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DIV-ISION

Planning Council

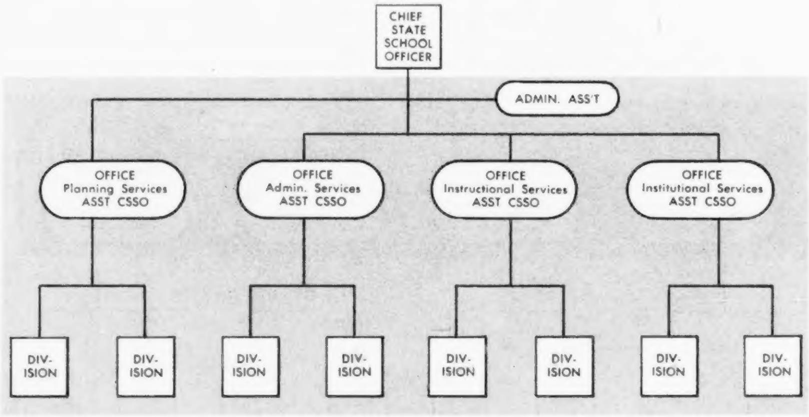
Although the Planning Unit lends feasibility to the improvement of planning, it is the Planning Council which becomes the hub of the planning process within the agency. Figure #4 suggests the composition of the Planning Council comprised basically of the heads of all operating divisions. Assistant chief state school officers are also members of the Planning Council, providing an overlap of personnel with the Executive Council. The assistant chief state school officer for planning becomes the Chairman of this Council. Again action in this council is based on consensus rather than voting. At all points in the planning process where matters are to go to the Executive Council for decisions, recommendations concerning those decisions are first developed by the Planning Council. This group also approve the specific allocation of personnel and resources to plans which are approved for development and/or implementation. The chief state school officer can be represented on this Council by an administrative assistant.

Program Review Committee

In order to expedite the work of the Planning Council, a subcommittee should be organized and designated as a Program Review Committee (see Figure #5). This committee can serve to screen all proposals and plans coming to the Planning Council. Such screening would determine the adequacy of the plan preparation prior to its submission to Planning Council. It is particularly imperative at this point for the Program Review Committee to insure

FIGURE No. 4

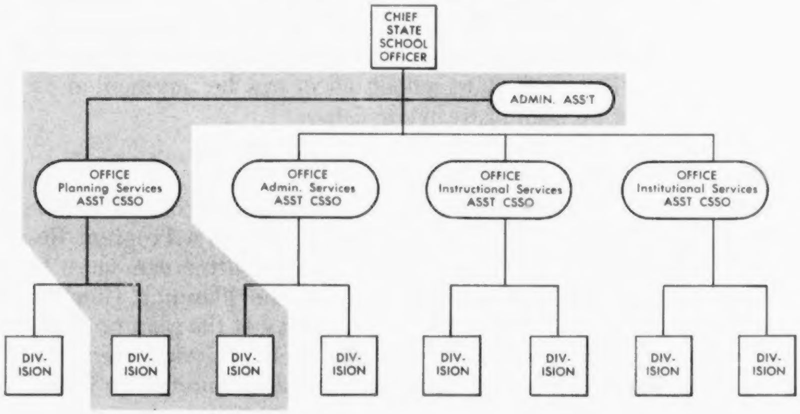
SEA ORGANIZATIONAL CHART
DEPICTING THE PLANNING COUNCIL


CHIEF STATE SCHOOL OFFICER
ADMIN. ASS'T
OFFICE Planning Services ASST CSSO
OFFICE Admin. Services ASST CSSO
OFFICE Instructional Services ASST CSSO
OFFICE Institutional Services ASST CSSO
DIV-ISION

that appropriate cost/benefit analysis have been made to guide choices between alternative strategies for meeting a given objective. Membership in this committee may take a variety of configurations. Figure #5 illustrates one possibility, i.e., that an assistant CSSO be chairman, with the Administrative Assistant again being designated as executive secretary, and with representation from two or more of the Divisions. One of the members will be a planning specialist from the planning unit.

FIGURE No. 5

SEA ORGANIZATIONAL CHART
DEPICTING THE REVIEWING COMMITTEE


CHIEF STATE SCHOOL OFFICER
ADMIN. ASS'T
OFFICE Planning Services ASST CSSO
OFFICE Admin. Services ASST CSSO
OFFICE Instructional Services ASST CSSO
OFFICE Institutional Services ASST CSSO
DIV-ISION

OPERATING DIVISIONS

Every staff member will participate extensively in the planning processes. It is anticipated that, although the planning unit will provide coordination and technical assistance for planning, each operating division will be fully involved in all aspects of planning related to its responsibilities. Such involvement is critical in the ideation stage of the planning process. It is also highly desirable as an assist to the planners during preliminary and detailed planning. Involvement during the planning process of program personnel improves their understanding and commitment to the new program and subsequently it is a substantial aid in the implementation process. To improve the quality of such involvement and to ease the task of communication between planners and program personnel, all personnel will need to be trained to some extent in the utilization of planning technology.

TASK FORCES

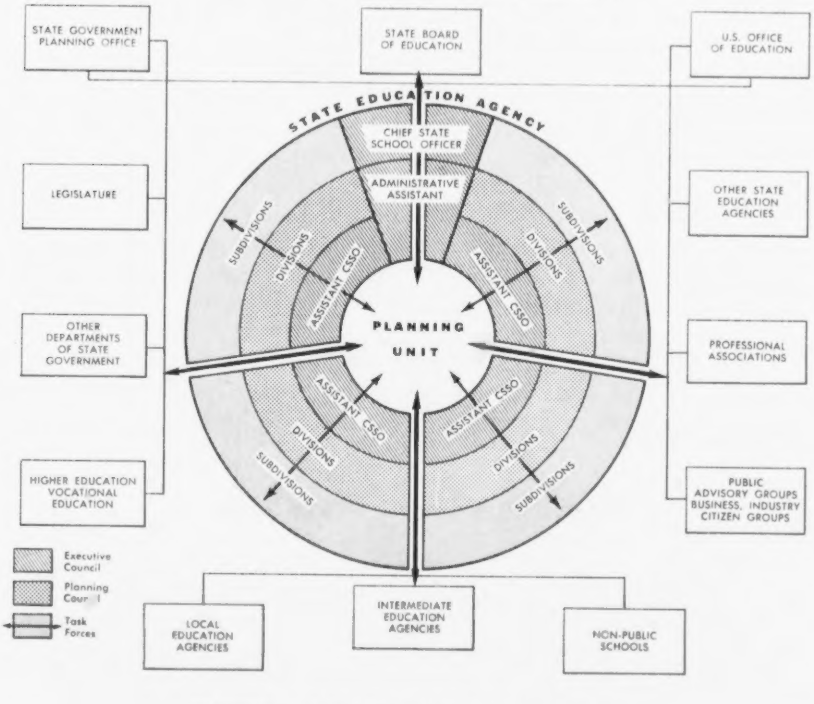
Developmental and implemental task forces will be assigned to selected groups designated as Task Forces. Personnel participating in a Task Force will be selected because of the applicability of their expertise to the particular problem being attacked, and/or because of their potential role in the implementation of its solution. They may come from a single division, may come from several divisions, or from both the state agency and other agencies. In some exceptional instances, personnel for a task force could be drawn exclusively from agencies outside the state education agency. A task force would be assigned on an ad hoc basis. Upon completion of the special assignment the task force would be dissolved.

TOTAL PLANNING STRUCTURE

In review, the planning structure for the state education agency described above involves agency personnel in an agency-wide planning process. As experience is gained it can be anticipated that the role of the agency could more and more become that of program leadership as a result of carefully developed long-range plans rather than a supervisory role dealing with immediate operational problems. The purpose and scope of the activities of present organizational elements would be changed or at least a major portion of the time of such elements would be devoted to planning considerations. For example, most state education agencies have an administrative council. This council would become the planning council with the responsibility of directing the work of the planning unit. It would also make recommendations to the Executive Council on all program plans designed for the improvement of education. Figure #6 portrays the agency in such a planning matrix. The planning unit, as catalyst and facilitator, is placed at the center with two-way arrows indicating a flow of information, technical assistance, and coordination, to and from all organizational subdivisions as well as to individual staff members. Agencywide representation in both the Planning Council and the Executive Council is intended in the illustration. "Task Forces" are represented as consisting of personnel from all segments of the agency as well as from outside the agency.

FIGURE No. 6

A FUNCTIONAL REPRESENTATION OF BOTH THE INTERNAL AND EXTERNAL SEA PLANNING MECHANISMS


STATE GOVERNMENT PLANNING OFFICE
STATE BOARD OF EDUCATION
U.S. OFFICE OF EDUCATION
STATE EDUCATION AGENCY
CHIEF STATE SCHOOL OFFICER
ADMINISTRATIVE ASSISTANT
LEGISLATURE
OTHER STATE EDUCATION AGENCIES
SUBDIVISIONS
DIVISIONS
ASSISTANT CSSO
PLANNING UNIT
OTHER DEPARTMENTS OF STATE GOVERNMENT
PROFESSIONAL ASSOCIATIONS
HIGHER EDUCATION VOCATIONAL EDUCATION
PUBLIC ADVISORY GROUPS BUSINESS, INDUSTRY CITIZEN GROUPS
Executive Council
Planning Council
Task Forces
LOCAL EDUCATION AGENCIES
INTERMEDIATE EDUCATION AGENCIES
NON-PUBLIC SCHOOLS

INTER-AGENCY RELATIONSHIPS

No state educational agency can conduct effective planning for educational improvement solely within itself, particularly if that planning is designed to achieve statewide change. Working relationships specifically for planning need to be cultivated with related agencies, both educational and non-educational, at various levels. Roe, describing his idealized state educational agency for the imaginary state of Nova, suggests planning ties with other agencies:

> *Planning and Development.* Not only is it necessary for the state education agency to look ahead at needs in education, but it has to consider the long-range future of society generally and work closely with other local, state and national agencies.
>
> Events have shown clearly that a governmental unit cannot live by itself, and that society's problems transcend city and state boundary lines. It should be apparent, therefore, that planning and development cannot take place in the vacuum of agency administrative authority. There is urgent need for interlocking relationships with many levels of society.
>
> This necessary broad dimension was added when the state education agency's planning and development office was created and charged with establishing formal working relationships with: (a) the state government planning and development commission; (b) regional research laboratories; (c) regional state education agency study and development groups made up of state educational agencies which have formed an interlocking association; (d) The Education Commission of the States; (e) The Study Commission of the National Council of Chief State School Officers; and (f) the U.S. Office of Education and its regional officers.
>
> Planning and development is now realistically tied to all levels of society affecting the education of children. By the same token, with broad formal relationships established through the planning and development function, the state is making a strong contribution to the development of national policy![10]

EDUCATIONAL AGENCIES WITHIN THE STATE

State-Level. Few state educational agencies currently have the jurisdiction over the full scope of educational programs within the state. In most cases, their assigned scope of activities is K-12 education, while higher education may come under a separate board or just be separate without a central board of control. In some states, vocational-technical education is also under a separate board. Where such separation of authority exists, there should be full cooperation to correlate programs between the various entities. It seems logical that responsibility for such coordination should rest, either by legislative fiat or by mutual agreement, with the state educational agency. Perhaps the ideal toward which to work is a state agency with integrated jurisdictional responsibilities eliminating the split authority which now exists. Figure #7 portrays a means whereby greater state level educational planning liason could be realized. The greater the coordination the greater the potential for articulation between common programs of different jurisdictions.

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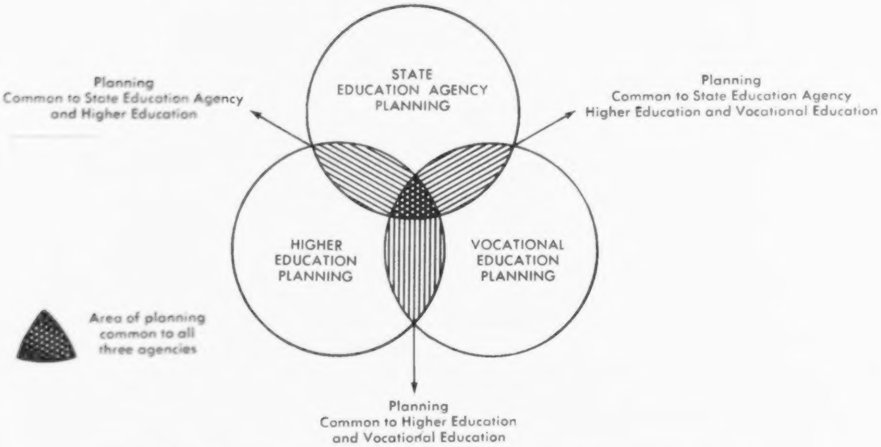
[10] William H. Roe, "The State Education Agency of the Future: A Preview," **Planning and Effecting Needed Changes in Education,** eds. Morphet and Ryan, (New York: Citation Press, 1967), p. 254.

FIGURE No. 7

STATE-LEVEL EDUCATIONAL PLANNING LIAISON


Planning
Common to State Education Agency and Higher Education
STATE EDUCATION AGENCY PLANNING
Planning
Common to State Education Agency Higher Education and Vocational Education
HIGHER EDUCATION PLANNING
VOCATIONAL EDUCATION PLANNING
Area of planning common to all three agencies
Planning
Common to Higher Education and Vocational Education

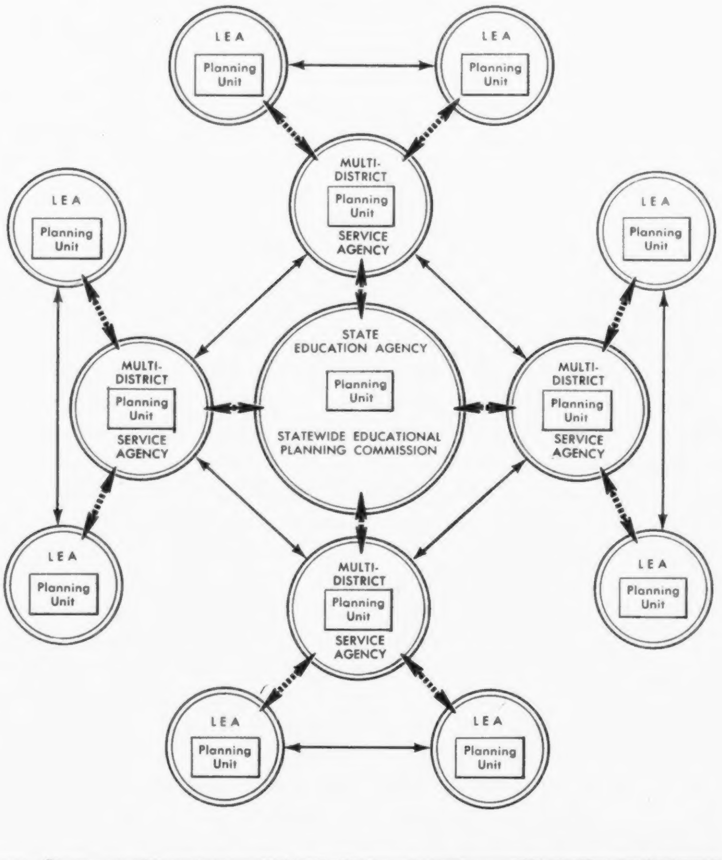
STATE-LEVEL EDUCATIONAL PLANNING LIASON

Multi-District Service Agencies. The nature of intermediate educational agencies, when considered nationally, is undergoing rather drastic change and evolution. One of the clearly identifiable trends (for example, in Texas and California) is to assign a planning responsibility to agencies which serve a number of school districts, sometimes encompassing several counties within the area of their responsibility. Even in states which have previously eliminated the intermediate agency, a perceptible trend – fostered by multi-agency projects of ESEA III – toward a new concept of multi-district service agency is identifiable. Sometimes the planning aspect of such service agencies is relatively limited, but it always exists to some extent. State education agencies should nurture area service agencies to provide services to local education agencies that they are unable to afford individually. Such regional service agencies could provide an important linkage between the state education agency and the local districts in a statewide planning structure. Through such a linkage, the local needs could be represented on a multi-district basis and they could be heard more effectively through the regional service planning component in statewide planning. The regional service agency could provide planning leadership and technical planning assistance to local education agencies and harmonize regional programs with state priorities.

The future may very well see the formalization and expansion of this planning function in both existing and emerging multidistrict service agencies. Where such a planning capacity exists, the state agency should seek the development of structural linkages and procedures to effect a planning liason with these agencies (see Figure #8).

FIGURE No. 8

PLANNING LINKAGES: STATE EDUCATION AGENCY; REGIONAL SERVICE UNITS, and LOCAL EDUCATION AGENCIES



Local. School districts should be encouraged to develop a specialized planning capacity to whatever extent is feasible in their specific circumstances. In large districts, it should be possible to develop a separate planning unit staffed with skilled planners, while in small districts the assistance of highly trained planners may have to be provided through the pooling of resources by several districts or through an intermediate agency. In any educational agency, all professional staff members should be regarded as having a planning responsibility and should receive training in the specific skills of planning. Whatever the size or circumstances of districts, *they should be involved in a planning liaison with the state agency, with other districts, and, where they exist, with multi-district service agencies.* Figure #8 illustrates some of the kinds of two-way linkages which should be involved.

Non-Public Schools. With the encouragement of federal support programs, especially E.S.E.A. Title III, the traditional gulf between public and non-public schools has been narrowed slightly and a few shaky bridges established across the chasm. In a day when the education of all is the concern of all, it seems imperative that these tenuous efforts be continued and strengthened. Non-public schools must be invited to participate in regional and statewide planning through the regional service agencies or directly with local school districts. Genuine planning liaisons can indeed be mutually advantageous.

INTER-STATE AND FEDERAL EDUCATIONAL PLANNING

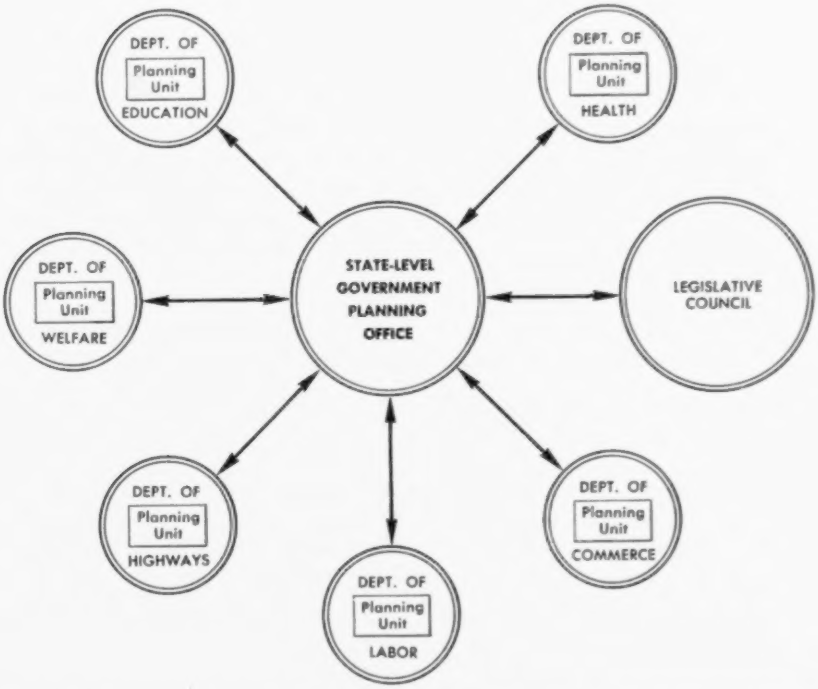
An education which prepares one for living only in a relatively restricted geographical area, if ever legitimate, is nothing short of absurd in this age of population mobility. Students educated in West Virginia may end up as citizens of Ohio or Texas or Utah or California or all four. The citizenry of each state has a vested interest in the extent and quality of the education program in other states. There is a great amount of common ground in the educational problems faced by the various states. Joint planning by states for the improvement of education makes a great deal of sense in theory. Its value in practical application is being demonstrated by several multi-state efforts now extant, including the multi-state project reported herein – "Comprehensive Planning for State Education Agencies," an eight-state project – "Designing Education for the Future," the "Education Commission of the States," ESEA Title IV Regional Educational Laboratories, and others. In many cases, the U. S. Office of Education is a participant as funding agent; in all cases, liaison for joint planning with the USOE seems not only commendable but also likely to produce mutually advantageous result. It is to be hoped that planning liaisons between states, and between states and the USOE can be further expanded and strengthened.

STATE GOVERNMENT PLANNING

Education does not take place in an environment stripped of all other factors or influences. Often the concerns of statewide education are intimately related to the concerns of other state-level agencies. Certainly this is always true of the joint concern over apportionment of the state budget among the programs of various state agencies. Workable linkages should be established between these agencies for purposes of coordinating planning to the optimum extent. Ideally, a state planning agency should be given the responsibility for establishing structure and procedures for such planning liaison. In simple form, Figure #9 portrays the idea of state government coordination for more effective state-level planning. It is mandatory that the major governmental departments inform one another of major activities that may have a direct bearing on the programs of other agencies. The planning office associ-

FIGURE No. 9

STATE-LEVEL GOVERNMENT PLANNING LINKAGES



ated with the administrative branch of state government should serve as the vehicle for such liaison. The technical planning of programs for each of the state governmental departments must be left to that agency. However, basic demographic data for the state, labor and economic statistics and other information can and should be commonly shared by all.

State priorities must be developed on a cooperative basis by a careful analysis of the needs of each agency. This should not occur in the administrative branch of state government nor in the legislative branch without extensive cooperative effort on the part of all departments (agencies) involved. In harmony with this approach a subcommittee of the 1961 Governors' Conference prepared a policy statement relative to state planning which recommended that each state:

> . . . create a central planning unit that can take into account all state development efforts and help coordinate and integrate these into an overall plan. . . .
>
> . . . reexamine the need for planning units in its major operating agencies to strengthen existing units or establish new ones where they are considered desirable. . . .[11]

It is just this type of relationship which is advocated here and toward which some states are already moving.

Statewide comprehensive planning should induce major and needed improvements in the legislative and administrative program for education in the state. Otherwise, planning is reduced to an academic exercise, interesting and revealing but not rewarding. To be effective, therefore, planning must not only be technically proficient, it must also affect the political and administrative processes which determine the fate of education. Educational plans should lead to improved action programs. Specifically, the targets of planning should be:

(1) The state legislative program, particularly its policy enactments and funding programs;

(2) The executive action programs, both at state and local levels.

Hence, planning organization should scrupulously involve action agencies in the planning process. The technical planner poses questions and confronts action agencies with plausible alternative means to improve action programs.

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[11] Sub-Committee on State Planning, The Governors' Conference. **State Planning: A Policy Statement.** (Chicago: The Council on State Governments, 1962).

PROFESSIONAL ORGANIZATIONS

A great deal of planning for educational improvement is currently being done, and has been for some time, by the numerous professional associations within education. Even though these associations represent to some extent vested interests, the planning potential they contain should not be overlooked. Tremendous advantages can accrue through planning liaison with these groups. To the extent of their involvement with related planning, liaison should also be established with teacher organizations and with the organizations representing other classifications of school personnel.

THE PUBLIC

The citizenry should not be overlooked in the planning. Although they are officially being represented by boards of education, there are other effective ways for involving lay citizens in the planning process. Citizen advisory groups have long been utilized by wise educational leaders. This effort should be expanded and improved, with citizen advisory groups involved wherever practicable in the planning process. The role of business and industry also must be enlarged; there are potential benefits from this source which are relatively untapped. Citizen groups and the hosts of community organizations should be given clear opportunities for expressing their points of view, with assurance that those opinions will really be listened to and will be carefully considered in the planning process. Each state should develop and implement a broad public information service that generates concern for the problems to be resolved through planning, as well as developing interest in the plans that emerge as a result of the planning process. So important are effective relationships with the public for purposes of planning that it would indeed seem wise for state education agencies to employ public information specialists who can maintain open communication channels and interrelationships for effective planning.

CHAPTER 5

A Strategy for Planning

THE PLANNING PROCESS

Three distinct dimensions of inquiry are inherent in the planning process. These are:

1. To what extent can it be demonstrated that the goals and objectives of the educational system are relevant to the persistent and compelling social, cultural, and economic problems of the state, region, and nation?
2. Given relevant goals and objectives to pursue, to what extent can it be demonstrated that these goals and objectives are in fact being achieved by the educational system, both short and long term?
3. To what extent can it be demonstrated that the educational system is efficient, while achieving its principal objectives?
    - (a) To what extent are resources used optimumly?
    - (b) To what extent are individual pupils benefiting from the system's programs, services, and organization?
    - (c) What undesired or unanticipated consequences result from the system's operations?

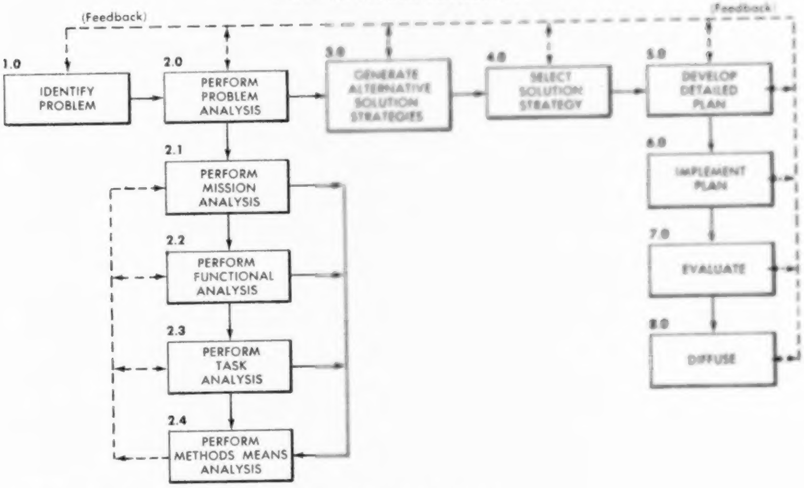
There are certain identifiable steps or phases in the planning process. This is true even though there is considerable divergence in planning quality, in the specific activities undertaken in planning, and in the depth and thoroughness of planning. The major phases of planning can be represented as shown in the flow chart model below. Additional phases could be added or other variations could be shown. However, for most planning tasks these steps would be sufficient if each one was adequately developed. Subsequent pages will detail further the tasks represented by each of the blocks in the flow chart. (See Figure 10).

1.0 Identify Problems

There are three major steps in identifying problems which need attention for the development of solutions: 1) determine

FIGURE No. 10

GENERAL FUNCTIONS OF PROBLEM-SOLVING
USING A SYSTEM APPROACH *



* Adapted from Operation PEP — a Statewide Project to Prepare Educational Planners for California

"what should be," 2) identify "what is," and 3) determine the discrepancies, i.e., the differentials between "what is" and "what should be."

Determine "What should be": The foundation upon which all else is, or should be, based is an operational philosophy of education, i.e., a philosophy which is functionally used as a guide in planning various aspects of education. Ergo, the first step in determining "what should be" is to accept or develop a statement of philosophy and the attendant values which are to underlie the curriculum. The superordinate objectives of education should be readily derivable from the philosophic base which is accepted; they in turn can be broken into subordinate objectives to any requisite level.

Much information and several planning tools are already available to assist in this step. From California's "Operation PEP" has come guidelines for developing philosophy and values.[12] Bloom and others have provided taxonomies which can be very helpful in the formulation of objectives.[13] Also of particular value in developing objectives are books by Mager and others on preparing objectives phrased in behavioral terms.[14] Current reports in the literature shed light on societal requirements, student characteristics, and on futuristic trends. Rosove[15] has identified twenty-one methods for forecasting the future, including brainstorming, Delphi techinque, expert opinion, literary fiction, scenarios, historical analogy, historical sequences, content analysis, social accounting, primary determinant, time-series extrapolation, contextual mapping, morphological analysis, relevance trees, decision matrices, deterministic models, probalistic models, gaming, operational simulation, cost-benefit analysis, and input-output tables.

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[12] Jefferson N. Eastmond, **Developing An Operational Philosophy of Education** (Burlingame, California: Operation PEP, 1968).

[13] Benjamin S. Bloom, **et al, Taxonomy of Educational Objectives, Handbook I: Cognitive Domain** (New York: David McKay Co., Inc., 1956).
David R. Krathwohl, **el al, Taxonomy of Educational Objectives Handbook II: Affective Domain** (New York: David McKay Co., Inc., 1964).

The process of determining "what should be" must never be considered simply as an academic exercise. It is, without question, *the most basic and likewise the most important part of the planning process*, as well as the most neglected. The results obtained here determine the direction, the relevance, and the validity of all the efforts which follow. Determining "what should be' must be a continuous and thorough activity if education is to fulfill its responsibility to society and to individual learners.

Determine what is. Using available methods or specially developed means of appraisal best suited to assessing current programs, the next step will be to determine how well education in the state achieves the objectives, values, and philosophy which have been laid out. While undue "bad mouthing" of existing programs is undesirable at this point, the apraisal process must be conducted with a tough mindedness which accepts the fact of fallibility and is ready to recognize and declare that shortcomings do in fact exist.

Determine the Discrepancies. With *what should be* and *what is* both identified, determining the perceived discrepancy between the two is all that is necessary to pinpoint possible unmet needs, or problems. Obviously, this is an oversimplification of the problem, both in terms of the sophistication of present instruments to measure adequately, as well as the assumption that once a future goal or objective has been established that that goal remains fixed. Undoubtedly, changes in society's hopes and aspirations, emerging new technology, and numerous other influences will result in changes in *what ought to be* before the original goals are achieved.

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[14] Robert F. Mager, **Preparing Instructional Objectives** (Palo Alto, Calif.: Fearon Publishers, Inc., 1962).
Robert F. Mager, **Developing Attitudes toward hearing** (Palo Alto, California: Fearon Publishers, 1968).

[15] P. E. Rosove, **A Provisional Survey and Evaluation of the Current Forecasting State of the Art for Possible Contributions to Long-Range Educational Policy Making.** (Santa Monica, California: System Development Corporation, 1967), p. 12-16 (mimeographed, Tech Memo 3640/000/00).

Establish Priorities. Nonetheless, once the identification of problems has been achieved, there must follow an assessment or apprisal of their relative importance in order to establish priorities and to select the "target" problem(s) upon which solution efforts will be concentrated. Specific suggestions as to how this should be accomplished include reviewing the problem for accuracy and validity, then considering such factors as the amount of discrepancy between *what is* and *what ought to be*, as well as the relative criticality of each problem, and the feasibility of solving such problem under circumstances existing at the time of consideration.[16]

2.0 ANALYZE PROBLEM

Perhaps the most rigorous and time consuming part of the problem solving process is that of *problem analysis*. The first step is to determine the major functions that must be undertaken in effecting a solution to the problem. This step, using the *system approach*, is called *mission analysis*. an overview of this and subsequent means for analyzing the target problem includes:

–Perform *Mission Analysis* which: (a) identifies the major objectives involved, (b) details the performance specifications required, (c) identifies the constraints, and (d) requires the preparation of a mission profile (a sequential flow chart of the major functions involved).

–Perform *Functional Analysis* which is the process used to determine what jobs must be done to accomplish the planning objectives.

–Perform *Task Analysis* which is a further breakdown of each job into the tasks that specify how each sub-function will be accomplished.

–Perform *Method Means Analysis* which identifies the alternative methods and/or means by which the tasks and consequently the entire mission can be accomplished.

3.0 GENERATE ALTERNATIVE SOLUTION STRATEGIES

The system analysis of a given problem results in identifying the elements – the raw material – for solving that problem. But it is still necessary to develop the configuration into which those elements will be molded. This involves a creative process of synthesis to arrive at various possible strategies, or *general* plans for utilizing various resources to solve that problem. It should be emphasized that greatly detailed plans are not necessary at this point, but that this step requires only generalized descriptions of the strategies suggested. Enough detailing is required to permit cost-effectiveness analysis to the degree possible so that suggested strategies may be effectively compared with each other in term of cost vs. benefit.

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[16] Jefferson N. Eastmond, "Teaching Notes for the System Aproach to Need Assessment and Problem Definition" (Burlingame, California: Operation PEP, 1968) pp. 14, 15 and 18 (mimeographed, 1968).

4.0 SELECT SOLUTION STRATEGY

On the basis of preliminary planning and cost-effectiveness analyses, one strategy is selected as appearing to contain a more promising solution than the others. This decision is not made by the planners but by the decision-makers based upon the data prepared by the planners.

5.0 DEVELOP DETAILED PLAN FOR SELECTED STRATEGY

Utilizing the principles of system synthesis or system engineering, detailed plans are developed for implementing the selected strategy. Network management systems (e.g., PERT – Program Evaluation and Review Technique, and CPM – Critical Path Method) and other planning and management techniques will be highly useful at this point.

6.0 IMPLEMENT PLAN

Once the plan of operation has been worked out in detail and accepted by the appropriate decision-makers, it is ready for implementation. Often a pilot program or field trial will be the first step in the implementation process. Some of the management systems utilized in the previous step will continue to provide considerable assistance during this phase of development.

7.0 DETERMINE STRATEGY EFFECTIVENESS (EVALUATE)

Technologically-based planning is incomplete unless a feedback loop exists to bring malfunctions to the attention of the appropriate managers, and unless that feedback is translated into modifications to eliminate, or at least reduce, the malfunctions. This is in fact the last step of the planning and development process.

8.0 DIFFUSE

This step is actually part of another process, but is included here to show where the planning leads. Successful strategies will be disseminated and diffused by various means to schools within the state, and perhaps elsewhere. Evaluation and feedback for revision will continue in order to maintain a dynamic system.

A PLANNING PROCEDURE

In the left hand column on Figure #11 is listed the organizational units of a state education agency may incorporate as a part of its planning mechanism. Listed near the top of the illustration are the functions of the problem solving process discussed on previous pages as the *system approach*. The activity circles and the direction of flow arrows show the planning process, and formal procedures by which those involved will fulfill their responsibilities in that process. The chart is necessarily limited in its capacity to depict, e.g., while the circles on the chart designate the *responsibility* for each planning function, there is nothing to show, in most cases, how others in the agency may be involved. Arrows show the ideal flow from beginning to end, although it is recognized that there will be exceptions. The long boxes at the top and bottom are intended only to illustrate the idea that there should be correlation and interaction during the planning process with the groups named.

A description to further clarify the conceptualization of the illustration follows.

ASSESS NEEDS

Coordinated by the Planning Unit, an assessment of needs is actually a never-ending process. At stipulated points, the data and information collected at that time will be combined and analyzed to provide requisite information for the identification of problems and the establishment of priorities. McLure[17] provides a framework for the basis of a needs assessment. Data for the process would be collected from all sources available to the agency including the public.

RECOMMEND GOALS AND PRIORITIES

A relatively thorough consideration of the information provided by needs assessment would be made by the Planning Council, which would develop highly specific recommendations for submission to the Executive Council of the agency.

ESTABLISH GOALS AND PRIORITIES

Action on recommendations of the Planning Council would be taken by the Executive Council, which may request additional information from the Planning Unit or make such modifications as they deem necessary in the goals and priorities as received by

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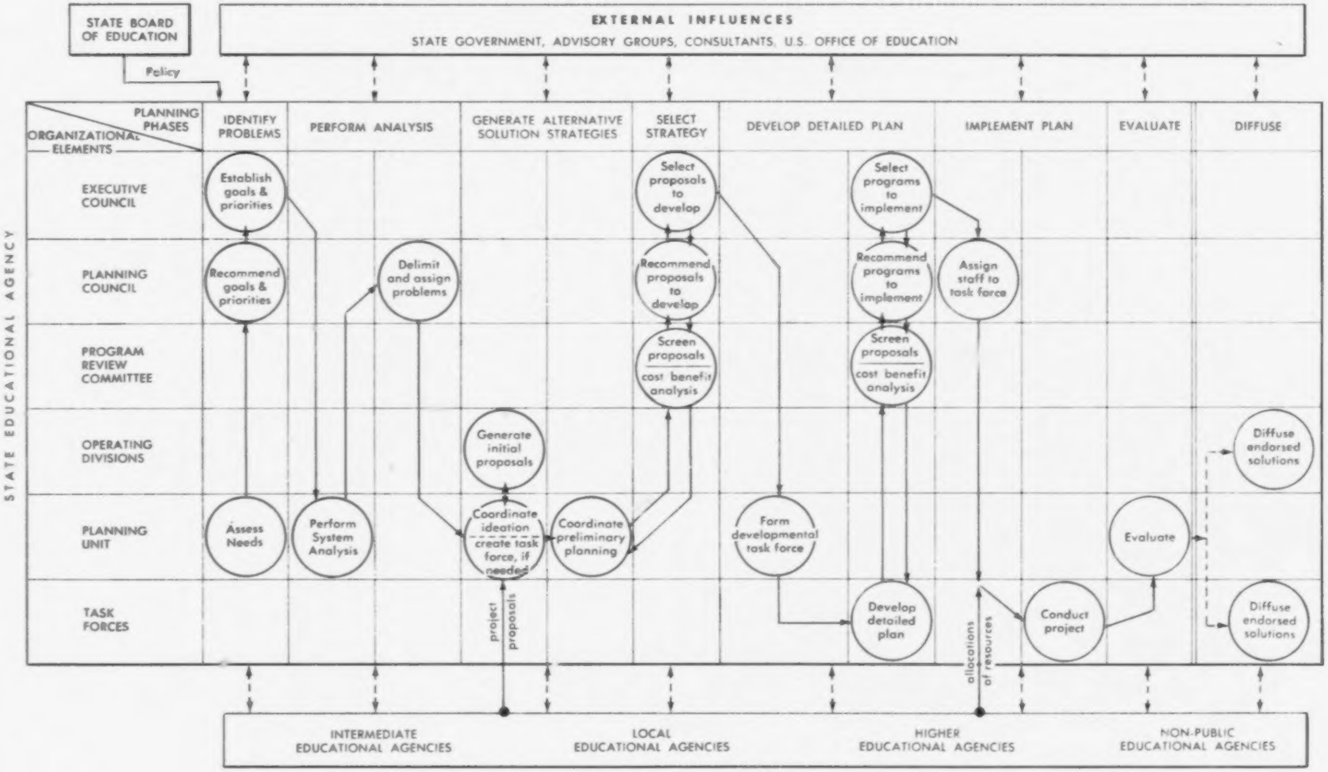
[17] William P. McLure, "Statewide Techiques for Survey and Analysis of Educational needs" (Urbana, Illinios: College of Education, University of Illinois 1968). (Mimeographed.)

FIGURE No. 11

A GENERALIZED INVOLVEMENT MODEL FOR COMPREHENSIVE EDUCATIONAL PLANNING


STATE BOARD OF EDUCATION
Policy
EXTERNAL INFLUENCES
STATE GOVERNMENT, ADVISORY GROUPS, CONSULTANTS, U.S. OFFICE OF EDUCATION
PLANNING PHASES
ORGANIZATIONAL ELEMENTS
IDENTIFY PROBLEMS
PERFORM ANALYSIS
GENERATE ALTERNATIVE SOLUTION STRATEGIES
SELECT STRATEGY
DEVELOP DETAILED PLAN
IMPLEMENT PLAN
EVALUATE
DIFFUSE
STATE EDUCATIONAL AGENCY
EXECUTIVE COUNCIL
PLANNING COUNCIL
PROGRAM REVIEW COMMITTEE
OPERATING DIVISIONS
PLANNING UNIT
TASK FORCES
Establish goals & priorities
Recommend goals & priorities
Assess Needs
Perform System Analysis
Delimit and assign problems
Generate initial proposals
Coordinate ideation
create task force, if needed
Coordinate preliminary planning
Select proposals to develop
Recommend proposals to develop
Screen proposals
cost benefit analysis
Form developmental task force
Select programs to implement
Recommend programs to implement
Screen proposals
cost benefit analysis
Develop detailed plan
Assign staff to task force
Conduct project
Evaluate
Diffuse endorsed solutions
Diffuse endorsed solutions
project proposals
allocations of resources
INTERMEDIATE EDUCATIONAL AGENCIES
LOCAL EDUCATIONAL AGENCIES
HIGHER EDUCATIONAL AGENCIES
NON-PUBLIC EDUCATIONAL AGENCIES

them. The final list of priorities would be used agency wide and where appropriate statewide as the priority programs for educational improvement in the state. This list would be widely disseminated as a call to action to resolve the priority educational problems.

PERFORM SYSTEM ANALYSIS

Beginning with the top priority problem, the Planning unit would make a careful and thorough system analysis of each problem assigned to it by the Executive Council.

DELIMIT AND ASSIGN PROBLEM

Taking into account the information accumulated through system analysis, the Planning Council would determine whether the problem should be dealt with in its entirety or reduced to some part of the whole. The portion selected would then be assigned for continuing solution efforts. Although occasionally the problem would be assigned to a division, normally the initial developmental aspects would be coordinated by the Planning Unit.

COORDINATE IDEATION

Coordinated by the Planning Unit, this step provides for the creation of solution strategies based on the analysis information, other related inputs, and the creative skill of those involved. If the problem specifically concerns one or more divisions, their personnel would be worked with directly. If it seems desirable, a special ad hoc task force would be formed for ideational purposes. Individual staff members and divisions agency-wide would be encouraged to submit ideas. Proposals generated by individual staff members divisions would enter the procedural flow at this point. The information produced via system analysis would be made available to all divisions and individuals working on potential solution strategies.

LEA Proposals. Proposals submitted by local educational agencies for federal funds administered by the state educational agency may also enter the procedural flow at this point. If properly utilized, this procedure could save a great deal of the time and effort now wasted in preparing competitive proposals which are not funded. For example, the proposals submitted at this point could be preliminary in nature and limited to a relatively few pages. During the first screening process, the proposals selected for further development would constitute just a few more than the total to be funded — certainly no more than double the amount to be funded would be encouraged. This approach would permit the retention of the values of competition, eliminate most of the time and effort that would otherwise have been expended on the screened-out proposals, and would give those developing detailed plans a better chance for funding.

COORDINATE PRELIMINARY PLANNING

As solution strategies are generated, the Planning Unit staff would assist proposal originators in preliminary planning according to guidelines which would have been developed. The initial development would be limited to a minimum for presenting the proposal clearly and intelligently. At this step the focus is on the preparation of the *idea* for initial screening and not the preparation of detailed plans. However, broad estimates of personnel and resources in a budget format would be included. Tentative identification of specific agency personnel for conducting the program should also be included.

SCREEN PROPOSALS

The Program Review Committee, a subcommittee of the Planning Council, would review preliminary proposals to ascertain that guidelines have been appropriately followed, that adequate information is provided for the Planning Council's consideration, that cost-effectiveness analysis have been made to permit selection from among alternatives, and that all available proposals related to the same priority are being submitted together. The Reviewing Committee may return the proposal with a request for additional information or it may transmit the proposal to the Planning Council immediately. The Program Review Committee does not make recommendations to the Planning Council. Its major role is that of processing proposals to see that adequate planning has occurred and that sufficient information is available to the Planning Council to enable it to fulfill its function.

RECOMMEND PROPOSALS FOR DEVELOPMENT

In the Planning Council, alternative proposals for solving the same problem would be carefully considered and recommendations would be prepared on each. Proposals may be returned for further information or modification, or they may be submitted to the Executive Council with either a recommendation to continue development or a recommendation to shelve the proposal. Since offices and divisions are represented on the Council by their administrators, a recommendation to continue development is a tentative commitment to the allocation of the necessary resources of the agency. Specific personnel and other resources for development would be tentatively identified at the time of the approval process by the Planning Council.

SELECT PROPOSALS FOR DEVELOPMENT

The final selection of proposals for further development would be made by the Executive Council acting on the recommendations of the Planning Council. The Exectuive Council may accept, reject or modify those recommendations. It may also return a proposal for modification or further information. Although the Executive Council may temporarily delay action on a proposal, those proposals not recycled must eventually be either selected for further development or disapproved and shelved. A decision for continuance also constitutes a definite commitment for the necessary resources to conduct the program, including the specific personnel and other resoures already tentatively identified by the Planning Council.

FORM DEVELOPMENTAL TASK FORCES

A Task Force would be formed following the approval of a proposal, utilizing personnel assigned by action of the Planning Council and Executive Council. This could include a variety of combinations, e.g., personnel from a single division, personnel from several divisions, or personnel from the state educational agency together with those from other agencies, especially local education agencies. The task force planning director would also be appointed at this time, and the time commitment for Task Force members would be specified. Every developmental task force would have assigned to it one staff member from the Planning Unit.

DEVELOP DETAILED PLAN FOR SELECTED STRATEGY

Detailed plans for implementing the selected program strategy would be developed by the assigned Task Force. Specific requirements for this detailed plan would vary, depending upon the nature of the solution strategy. The important requirement is that plans be developed in sufficient detail to be readily implementable. The Planning Unit would be responsible for providing sufficient technical assistance to assure high quality planning with an appropriate attention to detail.

SCREEN DETAILED PLANS
RECOMMEND PLANS TO IMPLEMENT
SELECT PLANS TO IMPLEMENT
ASSIGN PERSONNEL TO TASK FORCE

These steps listed above are essentially the same as those followed in the initial screening process, except that the decision at this point would be whether or not the detailed plan would be accepted and implemented. If the implementatio [illegible] ves school districts or other agencies, such agencies would also be involved in assigning personnel and/or other resources to the implementation Task Force.

CONDUCT PROJECT

Normally in the course of development, this step would involve a pilot or field trial of the plan. Plans have been made in detail; personnel and other resources have been allocated; all that remains is for the task force to translate the plans into action.

EVALUATE AND REVISE

A good plan will have the basis for evaluation carefully built into its objectives and performance specifications. As the project is implemented, the evaluation machinery would also be set up and implemented to be coordinated by the Planning Unit. Results from the evaluation would be the feedback which would be taken into account and result in a modification of the plan if desirable to eliminate malfunctions of the system. The Planning Unit would also be given the responsibility for coordinating such revisions.

CHAPTER 6

The Planning Unit

As has been noted elsewhere in this part, the kind of planning proposed in this report, i.e., *comprehensive*, *statewide*, *long-range*, and *systematic*, requires a specialized planning capability. Hansen has pointed out that,

> "*Planning is* inherently time consuming and expensive – though *not as expensive as failure to plan*. It takes substantial amounts of money. Planning must be directed carefully and deliberately by expert and often high-priced people; it is not something that can be done by a person who is told to do a little bit of planning in his spare time." "*Money*, *manpower*, and *data* are essential parts of the support system for organized planning."[18]

Every staff member of the state education agency should develop some degree of planning skill and should participate in planning, at appropriate times. However, if the responsibility for planning becomes a generalized assignment, it becomes in effect an assignment to no one. Some unit within the agency must be given the primary responsibility for planning. There are many organizational possibilities for planning. In this report the element assigned the responsibility for providing leadership, coordination, and technical planning capability is referred to generically as a *planning unit*.

PURPOSES OF A PLANNING UNIT

Because of the needed specialized planning expertise of Planning Unit personnel and because of the allocation of their time specifically and exclusively to planning functions, the unit would be assigned to coordinate the achievement of the following objectives. To:

Facilitate Decision-Making

Facilitate rational decision-making by providing the kinds, amounts, and quality of information pertinent to identifying and making a selection from the available alternatives for each decision. This may relate to any part of the planning process which requires decision.

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[18] Kenneth H. Hansen, "Planning and Change: Design – Decision – Action," **Cooperative Planning for Education in 1980** (Denver: Designing Education for the Future, 1968), p. 61.

Develop Plans

The unit will develop and/or assist in developing solution proposals and detailed plans for the operation and management of a project or program or any other solution strategy.

Conduct Evaluations

The unit will provide coordination and/or assistance in the evaluation of projects, programs, or other solution strategies. Plans developed by, or with the assistance of, the unit will contain in them the specifications upon which evaluation will be based.

Coordinate SEA Planning Strategy

The unit will be responsible for implementation, coordination, and facilitation of the planning strategy developed for internal functioning of the state education agency.

Serve as Liaison in Planning

The unit will serve in a liaison and inter-planning function with other agencies, institutions, organizations, and individuals in order to (1) correlate programs, functions, and interests, and (2) facilitate the implementation of plans.

Facilitate Planning Capabilities in LEA's

The state education agency planning unit will seek to encourage and stimulate the development of a planning capability in intermediate agencies and local school districts. Direct assistance to fledgling units will also be provided through training and consultative assistance.

COMPOSITION OF THE PLANNING UNIT

Organizational Elements

The chief state school officer should be considered the chief planner for the state education agency and all staff members should be expected to participate in the planning process as it relates to their assignments. It has already been pointed out, however, that this does not constitute adequate provision for an effective planning function. A specialized planning unit must be developed and specific time, allocation of personnel, and other resources must be made to the planning function.

Three basic sources have been proposed for providing the manpower for the agency's planning functions. They are, (1) Committees and/or task forces, either permanent or *ad hoc*, (2) consultants from outside the agency, or (3) permanent staff members assigned to the planning unit.

Committees and/or Task Forces. Hansen has delineated certain instances in which the specialized planning function may be accomplished by either temporary or permanent coalitions of staff personnel whose major assignments are in areas other than planning:

> The specific mechanisms for getting planning started and making it effective vary a great deal with the organization and the people involved, the problems that are faced, and the structural level within the total social system.
>
> For example, if an awareness both of the need for, and the possibility of, productive planning in a local school district is focused on an area of specific curricular change, a simple committee structure (properly supported . . .) with the assignment and authority to carry out the initial planning may be all that is required.
>
> At the state level, an adequate planning organization will require much more elaborate mechanisms. If the planning unit is concerned only with limited facets of education . . . , a group of experts under the chairmanship of a competent leader might meet the minimum requirements or organizational necessity . . .[19]

However, it is the authors contention that if a committee or a task force planning assignment is made, it is imperative that a definite allocation of time is made for each staff member assigned to the project. Released time must be provided or the planning function will be secondary to ongoing responsibilities. In addition, dependence solely on committees for task forces will jeopardize any hope for a comprehensive planning capability. Reliance on ad hoc committees has been the major reason planning has not been very effective in the past.

Consultants. Using "outside" consultants to provide the specialized planning capability desired has been suggested by some. Certainly such a plan would make it possible to utilize personnel from a wide variety disciplines, with highly specialized expertise in those disciplines, and with a greater degree of personal detachment from the internal operations of the agency. To depend upon consultants exclusively, however, results in sporadic planning devoted to putting out "fires." It does not lend itself to the development of an agency planning capability designed to achieve comprehension statewide planning.

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[19] Kenneth H. Hansen, "Planning and Change: Design — Decision — Action," **Cooperation Planning for Education in 1980** (Denver, Colorado: Designing Education for the Future, 1968), p. 60.

Permanent Staff. Consensus of the recommendations for state education agencies is that a planning unit with at least a minimum of three full-time staff be established in each SEA. A permanent unit of this nature will provide greater cohesiveness to the specialized planning capability, permit better continuity, make technical assistance more readily available, and provide more adequate coordination of the total planning process.

Recommendations. Each of the possibilities described above has both advantages and disadvantages. The most effective arrangements will probably strike a balance utilizing each of the three elements to some extent. It should be possible to capitalize on the advantages of each element and still, by utilizing all three, eliminate many of the disadvantages they pose when used alone. Whatever pattern an agency may establish its operation should be guided by at least the following major principles:

1 Specialized planning capabilities should be available, i.e., some SEA personnel should have expertise in current planning technologies.
2 Definite allocations of time for planning should be made.
3 The nature of the planning unit should be determined by the planning strategy, or "plan for planning," adopted by the agency.
4 Necessary support in terms of money, manpower, and data should be made available.

PERSONNEL FOR THE PLANNING UNIT

No consensus was possible concerning the specific skills necessary to constitute a planning unit. One point which became very clear, however, is that personnel with specialized skills are necessary to carry out the new planning functions for which the unit is designed. In general it is felt that a comprehensive planning office should procure a broad spectrum educational-generalist as its director. This should be a person who is a futurist with exciting ideas regarding the direction education must take, get a person seasoned as a practitioner, knowledgeable concerning the daily operation of the schools and possibly the most competent administrator in the state education agency. In addition (within resources and needs), a cadre of senior planners with areas of expertise in such specialties as systems analysis, information system, economics, and sociology.

The planning unit's first requirement may well be an extensive and intensive effort for staff training. The systems person may well have a background in research and seek new competencies in systems design, factor analysis and simulation techniques. A politico-economic specialist might have trained as an economist and should seek further training in *Programming-Planning-Budgeting System*, as well as economic forecasting, and the subtleties of the political-legislative process. An information systems specialist may have training as a data specialist or a computer systems man and seek further training in evaluation modes and dissemination techniques.

A socio-edcationalist may have basic training in school curriculum and curriculum development and may broaden his capabilities to include school plant planning, human relations techniques, or the psychology of learning theory.

The size of the planning staff and the degree of specialization of each member will be dependent upon the size of the agency and the resources available to it.

CREATING NEW ROLES FOR PLANNING

Each agency establishing a Planning Unit may wish to create personnel roles more or less different than those utilized by other agencies. Perhaps this is as it should be; in any case, the two major points which should be kept in mind are:

Identifying the Roles. Principles of effective planning should be utilized in determining the nature of personnel needed. Chapter 7 describes the essential steps in establishing a planning unit. If those step are followed carefully, they will produce clearly stated objectives for the unit and a list of specific responsibilities to which it will be assigned. That list of responsibilities will be the key element in determining the new roles needed.

The next important consideration is the number of persons which available funds will employ. In many cases this will mean combining the skills required so that one person is expected to have expertise in several areas, or it may mean selecting full-time personnel with expertise in certain areas while retaining sufficient funds to employ part-time consultants with expertise in the other fields or as seems practical it may be desirable and necessary to utilize a combination of both those alternatives.

Personnel and the New Roles. It would be much less than realistic to expect that trained people will be readily available to fill the new planning roles. The concept is too new and already the demand far exceeds the supply. In many cases, personnel with some expertise will be employed and given opportunities for additional training to fill any voids which may exist. In other cases, personnel with promising potential may be selected and provided training opportunities in several technological fields.

Each phase of the planning process must begin — for *each* problem — with the development of a strategy for achieving that phase for that problem. The answers should be determined to such questions as: *who* will be involved and *what* will they do? *what* input resources — consultants, research, literature — will be utilized in accomplishing this step? *how* will the work be done, i.e., what procedures will be followed, what activities will be involved? *when* is the task to be completed? *what* criteria can assist in determining if the task is adequately done?

CHAPTER 7

Establishing A Planning Capability

There is no better way to achieve an effective planning capability than to apply planning principles and technology to its development and subsequent implementation. The processes that have been proposed for use in solving other educational problems are equally efficacious in solving the problem of establishing a program for planning. Although each agency undertaking the task will undoubtedly approach it differently, the steps described in this chapter can serve as general guidelines, or as a basic methodology, which any agency may modify to suit its own circumstances. The steps are described in rather general terms, with no attempt to develop the detail necessary when actually establishing a planning program. It should also be noted that the steps cannot be completely separated, but in many cases will overlap or be conducted concurrently rather than consecutively. (See Figure #12).

PHASE I – THE DECISION TO DEVELOP PLANNING CAPABILITY

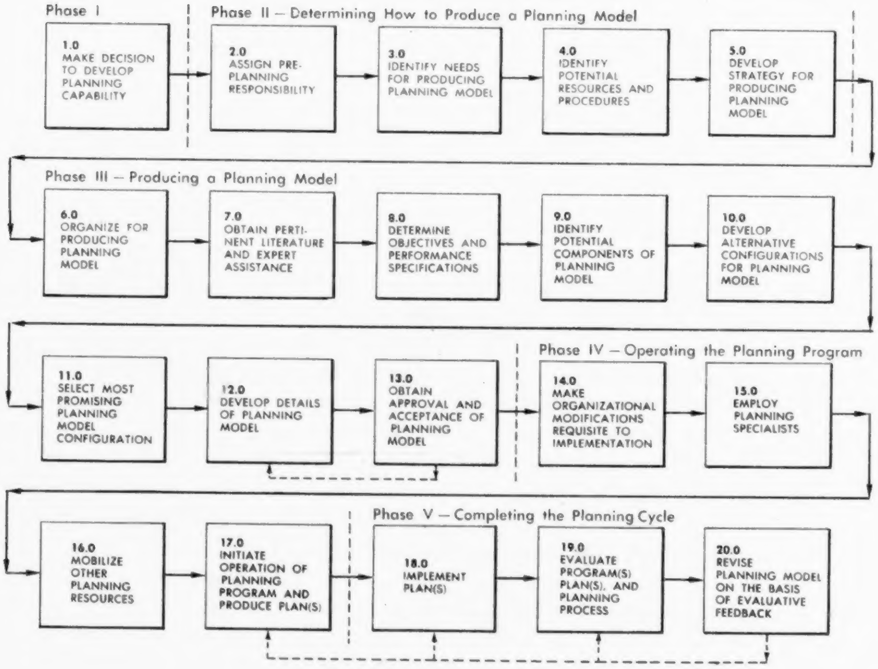
STEP 1 – MAKING THE INITIAL DECISION

The process leading to the development of an agency planning capability is most difficult to describe in its earliest stages of germination. What, after all, are the processes in initiating any significant change? Someone reads an article or a report, attends a conference, or is involved in a discussion, from which he picks up an idea which generates excitement. His enthusiasm infects co-workers, additional information is sought, and eventually the idea engenders enough interest and support that it is incorporated into the activities of the agency. This is probably much the same way in which a decision to do something about improving planning capabilities will come about. In that process, however, the major considerations are to involve as many staff members as possible and to make certain that agency commitment is made by top-level decision-makers, i.e., the chief state school officer and his assistants. Whoever is filling the catalytic role leading toward that decision should arrange for dissemination of information throughout the agency and even to concerned groups outside the agency, explaining the nature of planning capability and describing planning programs previously developed in other agencies. It is important that concurrence in the initial decision includes as many members of the staff as feasible at this point, but it is particularly imperative that a majority of agency administrators concur and it is absolutely essential that the chief state school officer make the decision.

The initial decision to develop an agency planning capability need only be a commitment to allocate the requisite resources for conducting activities intended to achieve that capability. The commitment is completely internal and is on a general level, rather than being a commitment to adopt any specific mechanisms, technologies, or a complete planning program as it operates in another

FIGURE No. 12

DEVELOPING PLANNING CAPABILITY: A MISSION PROFILE


Phase I
Phase II – Determining How to Produce a Planning Model
1.0 MAKE DECISION TO DEVELOP PLANNING CAPABILITY
2.0 ASSIGN PRE-PLANNING RESPONSIBILITY
3.0 IDENTIFY NEEDS FOR PRODUCING PLANNING MODEL
4.0 IDENTIFY POTENTIAL RESOURCES AND PROCEDURES
5.0 DEVELOP STRATEGY FOR PRODUCING PLANNING MODEL
Phase III – Producing a Planning Model
6.0 ORGANIZE FOR PRODUCING PLANNING MODEL
7.0 OBTAIN PERTINENT LITERATURE AND EXPERT ASSISTANCE
8.0 DETERMINE OBJECTIVES AND PERFORMANCE SPECIFICATIONS
9.0 IDENTIFY POTENTIAL COMPONENTS OF PLANNING MODEL
10.0 DEVELOP ALTERNATIVE CONFIGURATIONS FOR PLANNING MODEL
11.0 SELECT MOST PROMISING PLANNING MODEL CONFIGURATION
12.0 DEVELOP DETAILS OF PLANNING MODEL
13.0 OBTAIN APPROVAL AND ACCEPTANCE OF PLANNING MODEL
Phase IV – Operating the Planning Program
14.0 MAKE ORGANIZATIONAL MODIFICATIONS REQUISITE TO IMPLEMENTATION
15.0 EMPLOY PLANNING SPECIALISTS
16.0 MOBILIZE OTHER PLANNING RESOURCES
17.0 INITIATE OPERATION OF PLANNING PROGRAM AND PRODUCE PLAN(S)
Phase V – Completing the Planning Cycle
18.0 IMPLEMENT PLAN(S)
19.0 EVALUATE PROGRAM(S) PLAN(S), AND PLANNING PROCESS
20.0 REVISE PLANNING MODEL ON THE BASIS OF EVALUATIVE FEEDBACK

agency. It is undoubtedly preferable that the specifics of an agency's planning program be developed through its own careful planning. Thus, the initial decision will commit agency resources to the process delineated in phases II-V of this chapter. The initiation of each new phase will be contingent upon successful (i.e., appropriately approved) completion of the preceding phase. In fact, in a number of instances the initiation of each new step may also depend on successful completion of the preceding step. There is in the initial decision, therefore, no commitment to implement a plan until that plan is accepted and appropriately approved for adoption.

PHASE II – DETERMINING HOW TO PRODUCE A PLANNING MODEL

Step 2 – Assigning Pre-Planning Responsibility

It seems readily apparent that before a planning program can be established a plan or model of how that program will operate must be developed. But it must also be recognized that the production of any significant plan must itself be preceded by "pre-planning" to determine *how* the plan will be produced. Someone has to have the basic responsibility to do the preliminary investigation to estimate and identify the resources necessary to develop the planning model. Therefore, the first question to be faced and answered is: *who* will get the work on the plan started and have the overall responsibility for its successful completion? Someone has to do the detail work, so the next questions will be: *who* will actively direct the work? and, *who* will participate in the task? As the chief state school officer determines the assignments to be made in answering these questions, he should consider such potential alternatives as the following:

Assignment	**Possible Alternatives**
1. Project Coordinator (arrange assignment and inclusion of other personnel; be responsible for successful achievement of the total task)	a. Chief State School Officer b. Deputy Chief State School Officer c. Asst. Chief State School Officer
2. Project Director (responsible to direct, administer, and participate actively in the work of producing a "plan for planning")	a. Agency administrator or staff member b. Planning specialist employed by the agency for this responsibility c. Outside consultant on a parttime basis

3. Project Staff and Participants (must analyze the environmental needs for planning, survey the literature and develop alternative proposals for a planning model)	Any combination of the following: a. Agency personnel b. Outside consultants, e.g., — university — consultant firms — specialists in pertinent disciplines c. Other education agencies d. Business and industry e. Lay citizenry

Step 3 — Identifying Needs For Producing A Planning Model

Once a central task group is established, they in turn can analyze the problem, or task to which they are assigned, to determine the functions for accomplishing their assignment. As described in the previous chapter, the mission (project) objective should be formulated, performance specifications thoroughly delineated, constraints identified, the mission profile developed (the major steps outlined in sequential order), and both functional and task analyses completed.

Step 4 — Identifying Potential Resources and Activities

The required functions having been identified, it is appropriate to seek out and catalog the methods and means available for carrying out those functions. This process was partially initiated in Step 2 when personnel to conduct the project were identified. Additional sources of information and ideas need to be located. Training opportunities which could assist in the development of a model should be arranged for project staff personnel. Available literature which might assist in developing the planning model should be identified, as well as individuals having pertinent expertise. If a multi-disciplinary approach is to be incorporated in the planning model, it would be important to not only identify persons whose expertise is specifically in educational planning but to also locate experts in other fields who could be utilized in determining how their specific disciplines might contribute to educational planners. Possibilities encompass professional planners in government and industry, economists, social and cultural anthropologists, social psychologists, and a number of other professions.

In a closely related activity, it is important to identify agencies and organizations which should participate somehow in developing the planning model. The ideal will be to involve in the production of the model all those groups which will eventually participate in the operational planning program. Although practicalities may limit actual participation, every effort should be made to identify all those agencies that might participate in some way. Actually, this particular aspect of identification will undoubtedly continue on into the phases following.

Also to be identified at this point are the activities which could be used in producing the planning model. A long list of possibilities can be produced, including meetings, conferences, seminars, symposia, training, visits to exemplary programs, review of the literature, use of sub-committees, use of advisory committees, critiquing of draft proposals by various individuals within and outside the agency, and many others. This is also an activity which, although initiated at this point, will continue on in the next phase.

Finally, it is important to determine the funds which will be made available for travel, publications, training, consultants, and other needs. The availability of secretarial services and other support services should also be determined.

STEP 5 – DEVELOPING AN ACCEPTABLE STRATEGY FOR PRODUCING THE MODEL

The point has been reached at which selections of specific resources to do the development task can be made and alternative overall plans for their utilization can be developed. From a consideration of all relevant factors, including cost estimates of alternative aproaches, one overall plan or strategy must be selected. During this process, the requisite interaction must be had with agency decision-makers to obtain acceptance of the proposal for developing the plan and approval for action.

When a selection has been made, the strategy chosen will be developed in detail to determine *who* would be responsible for each aspect of the design and *how* that responsibility would be fulfilled, *who* will assist or be involved and *how* they will participate, *when* the assigned task is to be completed, which resources and activities will be used, *who* will make decisions as to the acceptability of each part and of the totality of the design, and *who* will mandate its implementation. The plan for planning the model has now been completed.

PHASE III – PRODUCING A PLANNING MODEL

STEP 6 – ORGANIZATING FOR THE TASK

It is quite likely that the basic task group which has conducted the pre-planning can and will continue through Phase III as that phase involves using the strategy and resources identified and selected in phase II. However, there may very well be additions to the task force, sub-committees may be formed, and advisory groups organized. Liaison and linkages would be established and organizational arrangements made for their interaction and inputs to the planning model's development. As noted earlier, individuals and groups who will participate in the planning program should also participate to the greatest extent feasible in the production of the planning model.

STEP 7 – OBTAINING PERTINENT INFORMATION

The literature identified earlier as containing potentially valuable information can now be obtained and reviewed thoroughly to glean ideas for the planning model. The consultants and others with expertise who have been selected from among those identified can now be used to gain their inputs and their interaction for the development of new ideas. Any training that has been determined to be necessary would be provided at this point.

STEP 8 – CONSTRUCTING OBJECTIVES AND DETERMINING RESOURCES

This step requires the detailed development of a mission analysis, a functional task analysis, and a methods-means analysis.[*] The mission (project) objective should be stated in porformance terms which describe what the planning program that is to be developed is expected to accomplish. Concomitant performance criteria or specifications (the measures of quantity and quality) must be developed in detail to provide guidelines by which the degree of success of the planning program that results can be judged. Since this description of the product determines the direction of all later planning, it should be developed with utmost care.

Constraints and limitations which may adversely affect or even prevent achievement of stated objectives must be identified. Examples might be budget limitations, personnel, or time restrictions; others may include attitude toward, acceptance of and probable performance in the planning program; or they may involve any of a number of other factors. Once identified, their real limitations can be explored and they can be appropriately dealt with in planning.

STEP 9 – IDENTIFY POTENTIAL COMPONENTS OF THE PLANNING MODEL

Once the desired product has been carefully described and the potential hurdles or barriers have been identified, the functions and tasks required to obtain the product must also be identified. Major functions will be identified first and flowcharted in a mission profile similar to that shown in figure #12. Each major function can in turn be broken into sub-functions by asking, "*What* must be done to accomplish this function?" First-level sub-functions can be similarly broken into successfully lower levels until the desired level of specificity has been reached.

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[*] A mission analysis includes four elements. (1) The development of the mission objective, (2) a detailing of the performance requirements of the **model,** (3) identification of the constraints, and (4) the development of a mission profile, e.g., the major logically sequential functions that must be performed to achieve the development of the model.

The model of a planning program is the product now being considered. The potential resources and methods-means for operating such a planning program would now be identified. Administrative procedures, organizational modifications, linkages or arrangements, planning expertise, training programs, data, support systems, finances, equipment and materials constitute a brief representation of the types of considerations which should be identified. Insofar as posible, *all* resources potentially available should be identified in this process, with no particular regard at this point for the likelihood of their use.

STEP 10 — DEVELOP ALTERNATIVE PLANNING MODELS

Potential elements or building blocks for an agency planning program would have been identified in Step 9. These now form the basis, through a process of selection and synthesis, for constructing a planning model. The initial step, just as in constructing a building, is to develop the general framework. The "dimensions" of a planning program are delineated by determining the scope and configuration of the program.

Scope: The nature and extent of involvement within the agency is a basic issue to be considered. Will the entire agency be involved in the planning program or process that is developed, or only some part of the agency? How deeply will those divisions of the agency affected be involved? What portions of the work of the total agency and its divisions will be included in the planning program? The nature and extent of involvement by agencies, organizations, and individuals outside the agency must be similarly determined. Funding and services provided to support the planning function will be a chief determinant of its scope. Other related issues affecting the determination of the scope for the planning program should also be resolved at this point.

Configuration. Developing the "shape" of a planning program requires identifying the functions or processes required and/or utilized in planning, then describing the organizational and procedural arrangements for conducting them. Major functions might include a list such as:

1. Directing, i.e., administering planning activities
2. Coordinating the use of agency expertise and other resources
3. Applying current planning technology to agency problems
4. Participating in planning in ways other than those noted above
5. Providing information to facilitate planning
6. Making decisions concerning plans and planning
7. Implementing the plans produced

The development of a general strategy would include the identification of vehicles or organizational elements to be used in performing each function at this point through identifying several alternatives in each case. An idea of the kinds of alternatives available may be gained from previous chapters of the syncretic model, as well as from the reports of models developed by project states. Some gross-level procedures would be developed to facilitate the linkage between selected organizational elements. The linkages should enable them to operate independently where necessary but they should be developed to assure harmonious program development and a sharing of resources.

STEP 11 – SELECTING A PLANNING MODEL FRAMEWORK

Choosing a framework for the agency's planning model requires attention to two major aspects: first, selection from among alternatives for the scope of the program and for each major component of the model; second, but accompanying the selection of major components, would be a concern for the interrelationships of the components as they join to form a total planning configuration. Planners will seek to determine, by considering relevant factors when comparing alternatives, which components and which total configuration appear to offer promise of greatest success when placed in operation. A cost-benefit analysis could very well be used to provide important input for differentiating between alternatives.

STEP 12 – DEVELOPING DETAILS OF PLANNING MODEL

With the general outline established, it would then be possible to fill in the details. Organizational aspects, procedures, and all other elements would be worked out to that level of specific detail necessary to provide operational guidelines for implementing the planning program. Steps to be taken in the transition from a plan or model to operational reality would also be spelled out at this point.

In most instances, decisions pertaining to the possible development of a planning unit would be most crucial since so many other aspects of the model would hinge either directly or indirectly on the formation of such a unit and the nature of it. As early as possible, therefore, a determination should be made as to what form the unit might take, the responsibilities to be assigned to it and the extent of resource allocation to such a planning unit. Figure 10 showed some of the forms that a planning unit might take, but the recommendation is now repeated that, wherever possible, the core of the planning unit be three or more full-time personnel with expertise in planning. Especially important would be the development of the internal structure of the unit. This can be initiated by listing the elements of expertise needed, based on planning requirements of the model. Using both realistic judgment and creative imagination, these elements should then be synthesized to form job specifications for the number of personnel to be included in the unit. The organizational structure can then be adapted to the number and kinds of personnel who will compose the unit.

Details of other organizational elements would be similarly worked out, as well as the interrelationships between such elements and the procedures to be utilized in working together. All other details of the planing model would be identified at this time in preparation for putting it into action. The major product of this step would be a document containing a thoroughly detailed plan for a statewide or an agency planning model whichever scope was selected.

Step 13 – Obtaining Approval and Acceptance of Planning Model.

The bridge between completion of the detailed planning model and its implementation is approval by appropriate decision-makers to mandate action on the plan. If the decision-makers were involved in the development of the model, this step would be a final review of the model. Many alternatives would already have been considered and set aside as the most feasible elements and procedures were explored. A concomitant should be a genuine acceptance of the plan, not only by the decision-makers, but by a major portion of the professional personnel agencywide.

PHASE IV – OPERATING THE PLANNING PROGRAM

Step 14 – Making Organizational Changes

Although organizational changes are sometimes difficult to effect readily, the degree of smoothness by which such changes occur in implementing the planning model would be directly proportional both to the plan's quality and to the genuineness of planning involvement by those who are to be affected. Details of the changes would be included in the final plan; it would be helpful if that plan provided for the specific steps to follow in making the necessary changes. This would be especially true if the planning program is to be implemented in stages.

Step 15 – Employing Planning Specialists

Since many of the roles for educational planning specialists are relatively new and the technological skills are only now emerging, educational planners are virtually non-existent. Two solutions to this problem seems possible. One would be to select interested staff members or applicants trained as planners in other fields who seem to have the background and talent to become educational planning specialists. Arrangements would have to be made for them to receive the necessary training to master one or more of the educational planning skills called for in the planning model. An educator would head the team. Another alternative would be to utilize the special expertise of selected consultants as their skills are needed to apply to specific planning problems.

Step 16 – Mobilizing Other Planning Resources

The nature of this step will depend on what the details of the planning model call for. One example might be an information system such as that discussed in part in the report of Puerto Rico's planning model. If a sophisticated system is to be developed, it would require a comprehensive data base and collection system as well as an advanced computer capability. Other resources needed would also be obtained and/or developed, as called for in the "plan for *planning*."

Step 17 – Initiating the Program and Producing Plans

A strategy for establishing the planning mechanisms would have to be included in the model. Necessary plans for getting the planning function started once the components of the model have been mobilized and brought to a state of readiness. Since the agency planning capability would probably involve the use of a dynamic and cyclical planning process, an important concern would be to determine at what point in the cycle planning would be initiated. Actually, it may be entirely feasible to commence planning at several points, theoretically at all points, in the planning process. All organization elements can also begin functioning, can begin doing the things they were designed to do. Initial efforts will be cumbersome and undoubtedly much less than perfect. Advances will be made in sporadic movements ahead. It will take time to develop the competence to smooth out the procedures and to develop confidence in the planning process.

As the machinery begins to move, the eventual results will be the production of various plans. Initially the products of the new planning program would not be of much higher caliber generally than the general quality of preceding plans. However, with experience, the quality of planning would be greatly improved.

PHASE V – COMPLETING THE PLANNING CYCLE

Step 18 – Implementing Plans

Since planning which does not result in action may be considered "an exercise in futility," an important part of an agency's planning capability is to establish the mechanisms which provide for the ready translation of plans to action. An earlier chapter described how the use of task forces, coordinated by an agencywide Planning Council, provides one possibility for implementation vehicles.

Step 19 – Evaluating Programs, Plans, and Process

Quality educational planning will permit, through skilled use of performance objectives and performance specifications, a degree of accountabiltiy not previously achievable. Any part of the problem-solving process with which educational planning is concerned may be readily delineated in the beginning. As far as the planning process itself is concerned, the clearest and most relevant inputs will come from an evaluation of its products. In the final analysis, this devolves about the operational program which is the end result of planning. Such programs can be evaluated in two general ways:

1. Major focus will be upon how well a given program achieves the performance requirements imposed upon it in planning. Then an attempt should be made to determine the extent to which both the successes and failures are directly attributable to the quality of planning.
2. The degree of success achieved by new programs needs to be compared with the success of the program(s) to which it is the successor. Necessarily, the comparison will be in terms of the objectives and specifications which the new program is designed to meet.

The intermediate product of planning is the plan itself. Although in a real sense a plan is meaningless until acted upon, the technology of planning is already at a level which will permit planning experts to assess the quality of a plan and ascribe some kind of ranking to that quality. Admittedly, the usefulness of such an evaluation will improve as the state of the art evolves to higher levels and educational planning becomes more and more a specific discipline. Plans can be evaluated on the basis of the quality of planning done in each aspect, e.g., how precisely and completely the performance objectives and specifications are formulated, how adequately related factors have been identified and dealt with, how and what alternative solutions were produced, the bases for selection of a solution, how thoroughly detailed operational guidelines have been developed, and other similar points. A plan can also be evaluated on the basis of how well it meets the objective and criteria which initiated and guided its own development. That is, every plan developed should begin with the objectives and criteria for the production of the plan itself. This chapter contains an example of what is meant, by showing that a preplanning activity is necessary in order to determine how the planning model (or plan) will be produced. It is from the criteria established in this pre-planning that the initial product of planning – the plan – can be assessed.

Finally, the planning process itself can be evaluated. As principles of educational planning come increasingly into focus, they can form a legitimate basis for critiquing the processes used in planning. With what is presently known, such an assessment could now include consideration of such aspects as the planning skills utilized, the expertize brought to bear on the problem, involvement of decision-makers and potential implementors in planning activities, adequacy of coordination within and outside the agency, and other relevant requirements of good planning.

Step 20 – Revising the Planning Model

The information produced through evaluation should be utilized as feedback to the planning model and should serve as the basis for making revisions. This means that the model itself should never be regarded as completed, but that it should retain the dynamic characteristics which will permit it to change as needed. Evaluation should be a continuous process (although it will very likely be much more extensive and/or intensive at some points than at others) and so should produce a continuous feedback flow. As rapidly as possible when malfunctions or deficiencies are identified, action should be taken to 1) do the planning necessary to appropriately modify the planning model and 2) alter operational arrangements in accord with those modifications. It is this cybernetic aspect of the process which will not only prevent a planning program from becoming static and stale but will also permit it to have the dynamics to constantly keep abreast of and, indeed, to lead in making relevant change.

SUMMARY

Too often in education a problem is identified and a solution method is immediately selected by the decision makers for the resolution of that problem. As noted before, each of the states participating in this project have suggested a model for planning. However, states are not encouraged to adopt immediately any one solution strategy.

The "Syncretic Model," described in this part of the report has included many of the best features of the participating states' models. However, the "syncretic model" is not intended to be the *ideal* solution for any one state to the problem of developing a comprehensive, statewide planning capability. Rather, a state concerned about developing an educational planning capability is advised to study the problem carefully using steps such as those described in this chapter as a guide. The suggested elements of a planning mechanism then become possible means for a solution. Other alternatives must also be considered and evaluated in terms of feasibility within the resources available, the social-political environmental context, and the objectives for the planning function.

Planning for change requires the systematic application of the collective intelligence of those concerned with and influenced by the change process. To be effective, a means (structural as well as process) must be established that facilitates the *systematic application of intelligence* to the resolution of educational problems in a truly *comprehensive* approach.

GLOSSARY OF EDUCATIONAL PLANNING TERMS[1]

Behavioral Objective	A goal described in performance terms. The performance, the performer, and/or the terminal behavior can be observed; thus, the achievement of the behavioral objective can be measured. Behavioral objectives are specific and unambiguous so that everyone involved interprets them essentially the same.
Benefit-Cost Analysis	A quantitative method designed to assist decision-makers to make the most efficient trade-offs between financial resources and competing programs. The total cost of each program, both direct and indirect, is estimated and the programs may be evaluated in terms of the advantages, outputs, or results (benefits), both short-run and long-run, which each is estimated to have. These estimates are expressed quantitatively. Since both program costs and their benefits have specific values, several alternative courses of action may be systematically compared and evaluated. (SDC)
Benefit-Cost Ratio	An economic indicator of efficiency, computed by dividing benefits by costs. Usually, both the annualized benefit stream and the cost stream are discounted so that the ratio reflects efficiency in terms of the present value of future benefits and costs. (USG)
Brainstorming	A form of group dynamics designed to encourage creative and imaginative thinking about the future via an uninhibited exchange of ideas. (SDC)
Budgeting	Budgeting is the process of translating planning and programming decisions into specific projected financial plans for

	relatively short periods of time. Budgets are short-range segments of action programs adopted which set out planned accomplishments and estimate the resources to be applied for the budget periods in order to attain those accomplishments. (USG)
CLOSED-LOOP SYSTEM	A system which readjusts itself continuously by means of its inherent capacity to detect directional differences. It is self-regulating or feedback regulating. Evaluative feedback on the performance of the system is used, for example, to modify the system. (Smith)
COMPREHENSIVE PLANNING	Planning which involves: 1. Consideration of all relevant factors 2. Participation of all agencies and persons who should contribute to the development of a given plan 3. Intensity and sophistication of planning 4. Long-range planning (Iowa) Broader coverage – not simply piecemeal planning), but comprehensive coordination of the whole educational enterprise – including non-formal education – so that its various levels and parts will grow in balance, thereby avoiding serious wastes and maximizing education's contribution to national development. (IIEP)
CONSTRAINT	Hurdles (real-world boundaries) that already exist (are already established) which may jeopardize in whole or in part the successful accomplishment of the mission or its specified performance requirements. (PEP)
CONTENT ANALYSIS	Abstracting from content – speeches, novels, art forms, etc. – generalizations or trends pertaining to a wide range of

	phenomena such as public attitudes, values, political ideology,national style, etc. (SDC)
Context	Milieu; environment. (Webster)
Cost-Benefit Analysis	An analytical approach to solving problems of choice which requires the definition of objective and identification of the alternative that yields the greatest benefits for any given cost, or what amounts to the same thing, that yields a required or chosen amount of benefits for the least cost. The term usually applies to situations in which the alternative outputs can be quantified in dollars. A chief characteristics of cost-benefit analysis is that its aim is to calculate the present value of benefits and costs, subject to specified constraints. See also Cost-effectiveness analysis. (USG)
Cost Curve	A graphical representation of the relationship of cost to another variable, such as output. It is conventional to construct these curves with costs along the vertical axis and the related variable along the horizontal axis. (USG)
Cost-Effectiveness Analysis	An analytical approach to solving problems of choice which requires the definition of objectives, identification of alternative ways of achieving the objective, and identification of the alternative that yields the greatest effectiveness for any given cost, or what amounts to the same thing, that yields a required or chosen degree of effectiveness for the least cost. The term is usually used in situations in which the alternative outputs cannot easily be quantified in dollars. See also: Cost-benefit analysis. (USG)

CRITERIA	Premises on which priorities are established among alternatives in order to measure relative degree of desirability. (USG)
CRITICAL PATH	In P.E.R.T., and other network-based management systems, that sequence of events and activities that has the greatest negative or least positive slack, or the longest path through the network. (Cook)
CYBERNETIC	Self-regulation of activity through a sensory-feedback organization of behavior in relation to both intrinsic and extrinsic variables. (Smith)
DECISION MATRICES	A method of allocating resources, determining priorities, or selecting goals by graphically displaying the relationships of multiple interdependent variables in two or three dimensions. For example, one dimension of a decision matrix in education might be available funds while the other dimension might be faculty and administrators' salaries, maintenance costs, library costs, etc. (SDC)
DECISION VARIABLE	A variable over which one can exert some control, whose value one can choose as a result of a decision. The decision variable might be the amount of food one must eat to satisfy hunger. If the relationship between the values of the decision variable and the level of goal attainment can be defined, one can then find the value of the decision variable that maximizes the attainment of the goal. (USG)
DELPHI TECHNIQUE	A procedure for systematically soliciting and collating the opinions of experts on the future of a preselected subject by sequential individual interrogations, usually by questionnaires. An effort is made to

	achieve consensus of convergency of opinion by the feedback of results to the participants. (SDC)
DETERMINISTIC MODELS	A deterministic model is a mathematical abstraction of real world phenomena. It is a set of relationships among quantitative elements of the following types: parameters, variable inputs, and variable outputs. The development of computer technology has made possible the implementation of models which are too complex for non-computerized solutions. (SDC)
DIFFUSION	The processes by which an innovation is adopted and placed in operation.
DISSEMINATION	The distribution of information, ostensibly about a program, project, or activity worthy of emulation.
EDUCATIONAL PLANNING EXPERT	See Educational Planning Specialist
EDUCATIONAL PLANNING SPECIALIST	A person skilled in the application of planning technology to the solution of educational problems, and whose job assignment is concerned wholly or in large part with educational planning. (IIEP)
EFFECTIVENESS	The performance or output received from an approach or a program. Ideally, it is a quantitative measure which can be used to evaluate the level of performance in relation to some standard, set of criteria, or end objective. (USG)
EVALUATION	Activities undertaken in an attempt to determine the value and/or success of a program, project, technique, etc.
EXPERT OPINION	The opinions of qualified specialists about the future of the phenomena with-

	in the field in which they have renown or the recognition of their peers. (SDC)
Feedback	In planning, feedback is the evaluative information which describes the functioning of a system and when there are malunctions, is used as a basis for revision or modification of the system.
Flow Chart	A pictorial description of a plan showing the interrelationships of all required events. (Cook)
Functional Analysis	The process used to determine what functions or jobs must be done to accomplish the mission objectives, i.e., deriving all the WHATS that have to be done to assure with predictability the successful achievement of the program objective. (PEP)
Functions	In the context of the system approach, those things (actions) which must be done to accomplish the overall job are referred to as functions. (PEP)
Gaming	Not to be confused with game theory, provides a simulated operational present or future environment structured so as to make possible multiple simultaneous interactions among competing or cooperating players. Games may be entirely manual in nature, or a computer may be used in some types of games to provide simulated inputs to the players and to record and analyze their performances. (SDC)
Generic	Relating to or characteristic of a whole group or class: general (Webster). A generic problem-solving model is one which ostensibly may be applied to the process of seeking a solution for all problems of the kind for which the model is designed.

HISTORICAL ANALOGY	Inferring the similarity between attributes or processes of two or more different historical developments, social conditions, or societies on the basis of other presumed similarities. (SDC)
HISTORICAL SEQUENCES	Formulations of the independent recurrence of similar sequential social, economic, and cultural processes and conditions in different societies or nations; or the treatment of sociocultural phenomena, in general, in terms of logico-historical sequential phases or stages of development. (SDC)
IMPLEMENT	To carry out: fulfill; esp. to give practical effect to and ensure of actual fulfillment by concrete measures. (Webster)
INDIVIDUALIZED INSTRUCTION	Individualized instruction consists of planning and conducting with each student a program of studies that is tailored to his learning needs and his characteristics as a learner. (Glen Heathers, in *Catalyst*)
INNOVATION	Educational innovation is a new or different concept, methodology, organization, or program that is systematically introduced into the classroom, school system and/or the state. (Catalyst)
INPUT-OUTPUT TABLES	Models of an economy which is disaggregated into sectors and in which explicit account is taken of sales and purchases between sectors. One set of parameters which is common to all such models are technical coefficients; the technical coefficients of an industry are the number of units of input of each industry which are required in order to produce one unit of output of the given industry. (SDC)
INTERFACE	A surface forming a common boundary of two bodies, spaces, or phases. (Web-

	ster) In the system approach, the term applies to the specific relationship and/or interaction between elements or components of the system.
INTERIM	A time intervening. (Webster)
INTERIM PERFORMANCE OBJECTIVE (IPO)	A behavioral objective that constitutes one step or phase in the achievement of a given terminal performance objective.
ITERATIVE PROCESS	A process for calculating a desired result by means of a repeating cycle of operations, which comes closer and closer to the desired result. (USG)
ITERATION	The process of checking for internal consistency. (PEP)
LITERARY FICTION	Novels or other forms of literature which imaginatively or creatively construct future social systems or conditions. (SDC)
LONG-RANGE PLANNING	Planning which looks beyond the immediate problems of the next year or two. The specific length of time considered is an arbitrary matter; various writers have stipulated such periods as five, ten, or twenty years.
MANAGEMENT MODEL	A design for implementing the operations model. It includes 1) administration requirements: allocation of areas of responsibility for function, 2) tasks: flow of operations (PERT) 3) costs, budgets, and evaluation: sensing and adjustment of system performance, planning on a continuous basis, PPBS. (PEP)
METHODS-MEANS ANALYSIS	The identification of all possible methods (strategies) and means (vehicles) for implementing each strategy, and the listing of the advantages and disadvantages of each for achieving one or more of the specified performance require-

	ments identified in a system analysis. (PEP)
Mission	The job to be done, be it a product, a completed service, or a change in the condition of something or somebody. (PEP)
Missison Analysis	The first major function involved in the analysis of a problem. Mission analysis includes 1) defining the overall mission objective, 2) determining the mission performance requirements, 3) determining mission constraints, and 4) determining the mission profile. (PEP)
Mission Objective	A precise statement expressed in operational terms which identifies the overall intent of a mission (or the job to be done). PEP)
Mission Profile	The major mutually exclusive functions which must be performed to accomplish a mission. These functions are arranged in logical sequence and depicted in flowchart form. (PEP)
Mission Statement	See "Mission Objective"
Model	A generic pattern which may be applied to a specific process or to a related set of processes. (IOWA)
	A schematic representation of the relationships that define a situation under study. A model may be mathematical equations, computer programs, or any other type of representation, ranging from verbal statements to physical objectives. Models permit the relatively simple manipulation of variables to determine how a process, object, or concept would behave in different situations. A decision model is a model which, in ef-

	fect, performs management's planning and control functions — to the extent that management so delegates when the model is constructed and implemented. (USG)
Need	A discrepancy or differential between "what is" and "what should be" (i.e., "what is required," or "what is desired"). (PEP) In educational planning "need" refers to *problems* rather than solutions, to the student "*product*" rather than the resources for achieving that product, to the *ends* of education rather than to the means for attaining those ends. $N = (O-E) > 0$
Network	A flow diagram consisting of the activities and events which must be accomplished to reach the program objectives, showing their planned sequences of accomplishment, interdependencies, and interrelationships. (PERT Guide)
Objectives	Goals, or results that the decision-maker wants, or should want, to attain. Hence, the end product or output of a program. (USG)
Operational Simulation	The exercising of operators of a system in their actual environment by the use of selected simulated inputs to provide education and training to the system's operators and/or to facilitate analysis and understanding of the system's operations for evolutionary design and development. The inputs may represent the world of the future. (SDC)
Operations Model	A design for producing the system products. It includes procedures, tasks, jobs, designs, equipment, method-means, and performance criteria. (PEP)
Operations Research (O.R.)	The use of analytic methods adopted from mathematics and other disciplines

	for solving operational problems. Among the common techniques used in operations research are: linear programming, probability theory, information theory, Monte Carlo methods and queuing techniques. (USG)
Parameter	A value which is held constant during some calculation. The parameters of a system or model are characteristic, some of which may be assigned selected values while examining the effects of variation in other characteristics of the system. (USG)
Performance Budget	A budget based upon functions, activities, and projects, whose principal analytical orientation is the measurement of efficiency of operating units. For example, such a budget in an agency might require computation of the cost per unit of mail processed for one branch of the agency and the cost per loan application processed in another branch. See also: Program budget. (USG)
Performance Criteria	See "Performance Requirements"
Performance Requirements	The exact criteria by which success (or failure) of a task or mission is measured. They may include such things as how the product is to perform, conditions under which it is to perform, product design requirements, and performance specifications. They tell us what the product will look like and/or do. (PEP)
Performance Specifications	See "Performance Requirements"
P.E.R.T.	P.E.R.T. (*P*rogram *E*valuation and *R*eview *T*echnique) is a set of principles, methods, and techniques for effective planning of objective-oriented work

	thereby establishing a sound basis for effective scheduling, costing, controlling and replanning in the management of programs. It employs a product oriented work breakdown structure, a network flow plan, elapsed time estimates and identification of critical paths in the networks, a schedule, and an analysis of the interrelated networks and other components. (PERT Guide).
PHILOSOPHY	A system of philosophical concepts; a theory underlying or regarding a sphere of activity or thought; the beliefs, concepts, and attitudes of an individual or group (Webster).
PLANNED CHANGE	A systematic and logical approach to planning for the future. There are two major aspects to planned change: 1) *prediction*, the accurate sensing of changing needs as reflected in societal goals, and the determination of necessary modifications in performance that will successfully accomplish these redefined goals, and)2 *design*, translating the predicted changes into specific individual behaviors relevant to successful completion of the goals. (PEP)
PLANNING	1. A process of preparing information in the form of a set of alternatives, and the probable consequences of each alternative, to aid in decision making. (IOWA) 2. Developing detailed operational guidelines for use in the implementation of a project or program.
PLANNING CAPABILITY	The organizational, procedural, techniological, and support arrangements by which an *agency* has the capacity to apply problem-solving processes to any problem which it may face.

PLANNING COMPETENCY	An individual's skill in the utilization of modern planning technologies.
P.P.B.S.	P.P.B.S. (Programming-Planning-Budgeting System) "Systematizes the (1) appraisal and comparison of various government activities in terms of their contributions to objectives, (2) determines how a given objective can be attained with a minimum expenditure of resources, (3) projects government activities over an adequate time horizon, (4) compares the relative contributions of private and public activities to stated objectives, and (5) allows for continuous revision of objectives, programms and budgets in the light of experience and changes in circumstances." (Novick)
PROBABILISTIC MODELS	A probabilistic model is a mathematical representation of the interactions among a number of variables in which the value of at least one variable is assigned by a random process. The numerical results of repeated exercises of the model will yield different numerical values. The values of variables may be based on estimates of future conditions. A computer facilitates running innumerable exercises of the model. (SDC)
PROBLEM	The requirement for a strategy or means to reduce or eliminate a need. (PEP)
PROGRAM	A major agency endeavor, mission oriented, which fulfills statutory or executive requirements, and which is defined in terms of the principal actions required to achieve a significant end objective. (USG)
PROGRAM CATEGORY	A classification within a program structure which expresses the purpose of the program. (USG)

PROGRAM ELEMENT	A subdivision of a program category which comprises the specific products that contribute to an agency's objective(s). If an agency's operating program is distributed over several program categories each part of the operating program identified by a discrete program category is a program element. (USG)
SCENARIOS	The imaginative construction into the future of a logical sequence of events based upon current conditions. (SDC)
SENSITIVITY ANALYSIS	A procedure by which different judgments are made about the value of a parameter and then an analysis is run with each of the different values to see what different effects result. The technique may be employed when the data base is non-existent or of such poor quality that other analytical methods cannot be employed reliably. (USG)
SIMULATION	An abstraction or simplification of a real world situation. Hence, in its broadest sense any model is a simulation, since it is designed to replicate some existential condition(s). Simulations may take the form of either deterministic models or probabilistic models. (USG)
SOCIAL ACCOUNTING	An effort to conjecture about the future of a nation, social system, or institution by determining the "sum" of a series of independent factors, a, b, c, . . . n which comprise it at time t, resulting in profile A, and then progressing to series a', b', c', . . . n' at time t', resulting in profile B. (SDC)
STRATEGY	A careful plan or method. (Webster)
SUB-SYSTEM	Any given part of a total system, which could in its own context be considered a system of its own.

SYSTEM	The sum total of parts working independently and in interaction to achieve previously specified objectives. (PEP)
SYSTEM ANALYSIS	The process of determining the parts of a system and the way in which they relate one to the other and with the total system. It is used during the problem-solving process for (1) identifying problems, and (2) analyzing a problem and setting goals. (PEP)
SYSTEM ANALYST	A technologist skilled in the use of the system approach to problem-solving.
SYSTEM APPROACH	A technological method of problem solving, systematically utilizing formalized principles of analysis and synthesis. A system approach to education would attempt to consider every element in any environment related to a definitive problem.
SYSTEM SYNTHESIS	The process of determining the most *effective* (relevant) and most effective (practical) way to achieve a mission objective. (PEP)
TARGET GROUP	A group within the general population toward which a program is aimed or on which it has a significant impact. (USG)
TASKS	Elements of a function which, when performed by people and things in proper sequential order, will or should resolve the parent function. Tasks may be performed by people, equipment, or people/equipment combinations. (PEP)
TASK ANALYSIS	The process of identifying the units of performance to be accomplished in order that the function from which they are derived may be accomplished. (PEP)
TERMINAL	A part that forms the end: extremity, termination. (Webster)

Termimal Performance Objective (TPO)	A behavioral objective applicable to the end product. In one context, terminal performance objectives may apply to the student product as he completes grade twelve; in another, they may apply to the student at the end of a course; and so on.
Time-Series Extrapolation	The extension of a series of measurements of a quantity over a period of time from the past into the future. (SDC)
Value	Relative worth, utility, or importance. (Webster)
Variable	A quantity that may increase or decrease without other essential changes. (USG)
C.S.S.O.	Chief State School Officers, i.e., State Superintendent of Public Instruction, State Commissioner of Education, etc.
E.S.E.A.	The *Elementary and Secondary Education Act* (Public Law 89-10) of 1965, amended since by other federal legislation.
E.P.D.A.	The *Education Professions Development Act* (Public Law 90-35) of 1968.
H.E.W.	Department of Health, Education and Welfare in the executive branch of the United States government.
N.D.E.A.	The *National Defense Education Act* (Public Law 85-864) of 1958.
S.D.E.	State Department of Education
S.E.A.	State Education Agency
U.S.O.E.	United States Office of Education, A, Dept. of Health, Education and Welfare.
V.E.A.	The Vocational Education Act (Public Law 88-210) 1963.

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Comprehensive Planning in State Education Agencies

Part II

Comprehensive Educational Planning in Puerto Rico

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COMPREHENSIVE PLANNING PROJECT
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VITAE

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INTRODUCTION

Every plan is a bridge with two foundations, one in the present and the other in the future. The plan itself is a structure designed to overcome the difficulties anticipated in moving from the present to the future. Before this structure can be built the foundations must be firmly established and there must be a clear definition of where one is and where one wants to go. As in the case of a physical bridge, these foundations must be firm enough to support the structure and to anchor it securely. The case is exactly the same in the preparation of any plan, including a plan for comprehensive planning.

Our first task in the Comprehensive Planning Project was to determine where we were. The second was to determine where we wanted to go. The third was to construct a bridge. None of these tasks were easy, but the first proved to be at least possible. The second we were able to do only in part. On the third we have made a bare beginning; beyond that, we can say only that the work will continue.

In the report which follows, "where we are" is the subject of the first two chapters. The first describes the problem which makes it necessary to do educational planning in Puerto Rico; the problem of not enough resources to meet the most urgent needs for education. The second chapter describes how far educational planning has advanced, i.e., where we are now and what we were already doing when the Comprehensive Planning Project began.

The third and fourth chapters of the report describe where we want to go. The third describes our general and long range goals and the fourth tells what we see as the next necessary steps. Some parts of the bridge begin to be described in this fourth chapter, but only individual sections, not the bridge as whole. In the final chapter we describe how we plan to organize for comprehensive planning. We describe an organization that may eventually build a comprehensive planning bridge.

CHAPTER 1

The Problem: Puerto Rico's Educational Delemma and the Need for Planning

EVERETT W. REIMER[*]

GENERAL BACKGROUND

Committed to satisfying a popular demand for education, both as an objective of social justice and as a means to furthering economic development, Puerto Rico, has assigned over thirty percent of its public resources to its school system for nearly thirty years. Even before 1940 expenditures on schooling represented the largest single items in the insular government's budget.

After 1940, this high rate of public investment in education was maintained in the belief that it would provides greater returns in social and economic growth than would various alternative investments.

During the 1940-1950 decade, efforts were made to provide schooling to the greatest possible proportion of the school age population. This pre-occupation produced rapid and substantial increases in the enrollment of Puerto Rican public schools. Tables I and II illustrate aspects of this growth.

TABLE I

PERCENT OF THE SCHOOL-AGE POPULATION ATTENDING SCHOOL, PUERTO RICO 1939/40 - 1965/66

Age Bracket	1939/40	1950/51	1960/61	1965/66
6-12	64.3	73.3	89.2	96.6
13-15	44.9	66.3	81.2	81.8
16-18	13.2	32.4	43.2	44.1
6-18	49.3	64.4	78.6	81.6

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[*] As indicated on the title page, this report has three co-authors:

Reimer in his capacity as Project Coordinator conceived the general outlines and content of the report, and was principal author of chapters 3 and 5. Lauria wrote chapters 1 and 2 and Santiago wrote chapter 4, in addition to his duties as Project Director, which involved setting the bases for many of the temporary or transitory planning instrumentalities described in the chapter.

Miss Aida Spanoz-Maldonado prepared most of the tables which appear in the text. The participation of Mrs. Aurora R. Canales, as Executive Secretary to the Coordinator, and Miss Luz M. Texidor, as Project Administrative Assistant should also be acknowledged. Miss Wilma Rivera and Mrs. Teresa Camara valiently typed and re-typed drafts of the report too numerous to mention.

TABLE II

ENROLLMENT IN THE PUERTO RICAN PUBLIC SCHOOLS, BY LEVEL, SELECTED, YEARS, 1939/40 – 1966/67

Grades	1939/40	1950/51	1955/56
1- 6	240,023	340,047	409,301
7- 9	35,386	68,418	92,760
10-12	10,658	31,222	43,134
Total	286,067	439,687	545,195

Grades	1960/61	1965/66	1966/67
1- 6	391,923	413,138	422,482
7- 9	125,412	131,083	134,295
10-12	60,661	86,647	89,343
Total	577,996	630,868	646,120

Accompanying this rapid increase in enrollment ratios — especially during the 1940-1960 period – were corresponding strains on the quality of educational services, very heavy increases in pupil/teacher and pupil/classroom ratios, and even a period of decline in cumulative retention rates. The level of training, experience, and duration of employment of public school teachers decreased. At the same time, the use of double and interlocking sessions,[1] a tactic which had been used since early in the century to deal with the pressure of students on teachers and classrooms, continued.

An additional factor contributing to the quantitative pressures on the schools was the growth of the school-age population. Puerto Rico had experienced high rates of population increase since 1900. The 1950-1960 period showed much lower rates of overall increase, but, after 1960, the rate of population growth showed a tendency to again increase. The school system thus has had to find resources to both expand the range of educational services, and to meet population expansion.

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[1] "Regular sessions" is defined at a level of 6 hours of daily instruction. In "double sessions," originally one teacher provided 3 hours of daily instruction to two groups of students in one or more grades, one group during the morning and another in the afternoon, using the same classroom. In an increasing number of cases, 4 hours of instruction are provided to some groups. Title I ESEA funds are used to provide specialist teachers, principally in English, who offer the fourth hour. This also represents a considerable increase in the quality of the teaching available to students enrolled in this type of organization. In "interlocking sessions," two teachers offer, 5 hours daily instruction to each of two groups, one group in the morning and the second in the afternoon.

Until recently, major emphasis was placed on resolving this quantitative dilemma. Resources were devoted, simultaneously, to the maximum expansion of the number of pupils, and to an attempt to reduce teacher/pupil and pupil/facility ratios to figures traditionally accepted as representing proper standards of service.[2] Tables III and IV indicate the progress of these efforts in terms of the proportions enrolled in regular, interlocking, and double sessions, and the corresponding teacher student ratios obtaining for various school levels.

Until 1963, priority in the reduction of double sessions was given to the urban areas and, generally, to schools serving sectors of the population already favored by higher family incomes and levels of living. At present, double sessions are basically a feature of the rural and agricultural areas (especially those portions of the rural area otherwise characterized by low levels of living) and of the urban slums. However, there is also appreciable pressure on facilities in the rapidly growing suburban zones of the capital city – schools which serve middle-income families, and, with the dispersion of public housing, an increasing number of lower-income households.

It should be emphasized that double sessions represent an attempt to extend schooling, no matter how meager, to the largest possible number of students. In many isolated rural neighborhoods, where the total enrollment was very low, double sessions were used to extend some modicum of educational services to such areas. At present, busing is being used in some communities to resolve this type of problem.

A massive effort to expand enrollment and enrollment ratios permitted the achievement of near-universal enrollment of all elementary school-age children by 1954. There were also corresponding escalations in secondary enrollment ratios. Yet, despite these efforts it became increasingly apparent that these developments were not accompanied by commensurate increases in educational output, either qualitatively or quantitatively. Studies and forecasts of manpower showed that the quantitative expansion of educational facilities and the number of graduates would be insufficient to meet the needs of the Puerto Rican economy.

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[2] Recent policy has been to experiment with a wider variety of solutions to the educational dilemma, recognizing that previously accepted indices of service do not necessarily match the most rewarding and effective educational strategies and tactics.

Just how traditional and hoary some of these standards of service are is illustrated by the aged formula of "one teacher for every thirty children." This figure was originally based upon the classroom configuration imposed by Sumerian engineering six thousand years ago, in which rooms built with the type of brick then in use could accomodate 30 young students and no more.

TABLE III

NUMBER (IN THOUSANDS) AND PERCENTAGE OF PUBLIC DAY SCHOOL PUPILS ENROLLMENT IN REGULAR, DOUBLE, AND INTERLOCKING SESSIONS, BY SCHOOL LEVEL, SELECTED YEARS 1950/51 – 1966/67

Level and type of session	**1950/51**		**1955/56**		**1959/60**		**1960/61**		**1961/62**		**1962/63**		**1963/64**		**1964/65**		**1965/66**		**1966/67**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Elementary (1-6)																				
Regular (6 Hrs.)	48.6	15	53.6	13	114.8	29	122.9	31	128.6	33	137.0	35	146.9	37	157.4	39	176.6	43	187.5	45
Double (3 Hrs.)	237.0	71	286.9	71	241.3	61	203.9	52	184.9	48	171.9	44	164.2	42	154.3	38	128.2	32	90.8	22
Double (4 Hrs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.2	2	34.1	8
Interlocking (5 Hrs.)	47.8	14	63.0	16	38.3	9	64.4	16	75.6	19	81.9	21	83.6	21	90.8	23	95.6	23	104.2	25
Total	333.5	100	403.5	100	394.4	100	391.2	100	389.1	100	390.7	100	394.7	100	402.5	100	407.6	100	416.6	100
Intermediate (7-9)																				
Regular (6 Hrs.)	50.0	74	52.0	57	76.0	63	80.5	64	74.6	59	76.9	60	76.9	61	78.9	62	80.2	63	82.7	62
Interlocking (5 Hrs.)	17.7	26	39.9	43	44.6	37	44.8	36	52.6	41	50.2	40	49.9	39	48.4	38	49.2	37	50.2	38
Total	67.7	100	91.7	100	120.6	100	125.3	100	127.2	100	127.2	100	126.8	100	127.3	100	129.4	100	133.0	100
High (10-12)																				
Regular (6 Hrs.)	28.0	90	33.4	78	47.5	82	51.3	85	49.5	75	51.3	70	50.9	64	49.3	59	51.9	61	56.4	64
Interlocking (5 Hrs.)	3.0	10	9.4	22	10.2	18	9.3	15	16.2	25	21.5	30	28.0	36	33.7	41	33.8	39	32.3	36
Total	31.0	100	42.8	100	57.7	100	60.6	100	65.8	100	72.8	100	78.9	100	83.0	100	85.7	100	88.7	100
All Levels																				
Interlocking (5 Hrs.)	126.7	29	139.0	26	238.2	42	254.7	44	252.7	43	265.1	45	274.7	46	285.6	47	308.7	50	326.6	51.1
Regular (6 Hrs.)	237.0	55	286.9	53	241.3	42	203.9	35	184.9	32	171.9	29	164.2	27	154.3	25	128.2	21	90.8	14.2
Double (3 Hrs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.2	1	34.1	5.4
Double (4 Hrs.)	68.5	16	112.1	21	93.2	16	118.5	21	144.4	25	154.0	26	161.0	27	172.0	28	178.6	28	186.8	29.3
Total	432.3	100	538.0	100	572.7	100	577.1	100	582.0	100	590.0	100	600.40	100	612.9	100	622.7	100	638.3	100

NOTE: Figures prior to 1961/62 correspond to sixth school month; all other to first school month.

Source: Division of statistics. O.E.P.D., Department of Education, Commonwealth of Puerto Rico.

TABLE IV

AVERAGE NUMBER OF PUPILS PER CLASSROOM TEACHER, BY SCHOOL LEVEL, AND TYPE OF SESSION, FIRST SCHOOL MONTH, PUERTO RICO SCHOOL YEARS 1950/51 - 1965/66

Level and Organization	1950/51	1955/56	1959/60	1961/62	1962/63	1963/64	1964/65	1965/66
Elementary School								
Single Session	43.89	43.32	36.92	35.3	34.5	34.4	37.7	33.8
Double Session (3 Hrs.)	68.88	66.26	59.51	55.6	54.2	53.7	52.8	54.5
Double Session (4 Hrs.)	—	—	—	—	—	—	—	45.5
Interlocking Session	53.12	49.56	42.14	39.9	39.3	38.2	37.8	37.1
Total	61.20	59.09	48.98	43.9	42.4	41.5	40.3	39.5
Junior High School								
Single Session	28.28	31.46	30.69	30.0	29.6	28.7	28.6	28.2
Interlocking Session	37.71	35.45	36.60	33.9	32.2	32.5	30.9	31.4
Total	30.26	33.07	32.72	31.5	30.6	30.1	29.5	29.4
Senior High School								
Single Session	37.00	38.54	35.72	35.2	35.3	34.0	32.6	30.8
Interlocking Session	35.82	41.35	34.80	35.1	37.6	37.8	36.5	35.0
Total	36.88	39.12	35.55	35.2	36.0	35.2	34.0	32.3

Retention rates remained too low to meet either the estimated manpower requirements for an educated labor force or the goal of universal secondary education. (Tables V-1, V-2 and V-3 illustrate changes in cumulative retention rates during the period in question.) Inputs to education were substantially increased

TABLE V-1

Cumulative Retention Rates, 1st - 6th Grades, School Years 1943/44 - 1955/56, Public Day Schools

First Grade Enrollment		Sixth Grade Enrollment		Five Years Later
School Year	**Number of pupils**[1]	**School Year**	**Number of pupils**	**% of 1st Grade Enrollment Five years earlier**
1943/44	63,717	1948/49	28,205	44.26
1944/45	71,880	1949/50	32,096	44.65
1945/46	73,509	1950/51	35,480	48.26
1946/47	74,044	1951/52	38,128	51.49
1947/48	74,441	1952/53	39,481	53.03
1948/49	73,257	1953/54	41,827	57.09
1949/50	75,163	1954/55	45,469	60.49
1950/51	81,195	1955/56	50,051	61.64
1951/52	74,779	1956/57	49,542	66.25
1952/53	81,095	1957/58	54,879	67.67
1953/54	87,052	1958/59	59,148	67.94
1954/55	78,372	1959/60	56,404	71.96
1955/56	75,712	1960/61	53,892	71.18
1956/57	74,035	1961/62	53,817	72.69
1957/58	73,676	1962/63	52,480	71.23
1958/59	71,522	1963/64	50,543	70.66
1959/60	76,778	1964/65	53,151	69.22
1960/61	78,636	1965/66	55,644	70.76
1961/62	80,805	1966/67	58,059[2]	71.85

Source: Enrollment figures: Statistics Division, Office of Planning and Educational Development.

[1] Enrollment in Sixth month of School year (January).

[2] Enrollment in final month of School year (May).

TABLE V-2

CUMULATIVE RETENTION RATES, 7TH - 12TH GRADES, SCHOOL YEARS 1943/44 - 1965/66

Seventh Grade Enrollment		Twelfth Grade Enrollment		Five Years Later
School Year	Number of pupils	School Year	Number of pupils[1]	% of 7th Grade Enrollment Five years earlier
1943/44	18,752	1948/49	7,108	37.90
1944/45	21,378	1949/50	8,123	37.99
1945/46	21,555	1950/51	8,048	37.33
1946/47	21,590	1951/52	8,119	37.60
1947/48	22,831	1952/53	8,127	35.59
1948/49	23,197	1953/54	8,442	36.39
1949/50	24,479	1954/55	8,985	36.70
1950/51	28,530	1955/56	10,277	36.02
1951/52	29,931	1956/57	10,967	36.64
1952/53	32,523	1957/58	11,542	35.48
1953/54	33,851	1958/59	13,425	39.65
1954/55	36,330	1959/60	13,891	38.23
1955/56	38,838	1960/61	14,790	38.08
1956/57	42,628	1961/62	16,337	38.32
1957/58	43,914	1962/63	17,407	39.63
1958/59	48,142	1963/64	19,415	40.32
1959/60	52,008	1964/65	22,146	42.58
1960/61	50,285	1965/66	22,516	44.77
1961/62	49,821	1966/67	23,187[2]	46.54

Source: Enrollment figures: Statistics Division, Office of Planning and Educational Development.

[1] Enrollment in Sixth month of School year (January).

[2] Enrollment in final month of School year (May).

TABLE V-3

Cumulative Retention Rates, 1st - 12th Grades, School Years 1943/44 - 1966/67 Public Day Scools

First Grade Enrollment		**Twelfth Grade Enrollment**		**Eleven Years Later**
School Year	**Number of pupils**	**School Year**	**Number of pupils[1]**	**% of 1st Grade Enrollment Eleven years earlier**
1943/44	63,717	1954/55	8,985	14.10
1944/45	71,880	1955/56	10,277	14.29
1945/46	73,509	1956/57	10,967	14.91
1946/47	74,044	1957/58	11,542	15.58
1947/48	74,441	1958/59	13,425	18.03
1948/49	73,257	1959/60	13,891	18.96
1949/50	75,163	1960/61	14,790	19.67
1950/51	81,195	1961/62	16,337	20.12
1951/52	74,779	1962/63	17,407	23.27
1952/53	81,095	1963/64	19,415	23.94
1953/54	87,052	1964/65	22,146	25.43
1954/55	78,372	1965/66	22,516	29.73
1955/56	75,712	1966/67	23,187	30.62

Source: Enrollment figures: Statistics Division, Office of Planning and Educational Development.

[1] Enrollment in Sixth month of School year (January).

[2] Enrollment in final month of School year (May).

after 1957, when the disparity between educational output and estimated manpower requirements was demonstrated, and were even further increased after 1960. However, retention rates did not respond to these additional resource allocations; after 1960, rapidly increasing units costs for teacher and classrooms limited the effect of budget increases.

DYNAMICS OF THE PROBLEM

At this point, around 1960, the following conditions and contradictions dominated the development of Puerto Rican public education.

Enrollment of Underprivileged Children

As in other developing societies, the expansion of enrollment meant that children from underprivileged social classes, previously marginal to the schools, were being incorporated into them. The schools were not adapted to these children, nor were these children adapted to schooling.[3] This factor alone would tend to cause an increase in dropouts and a decline in retention rates. Declining retention rates would appear first in elementary schools and then in secondary schools, being more elastic in the former.

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[3] This is not to imply that the educational efficiency and effectiveness of the school system, when it catered only to the more privileged segments of the society, was what it should be.

The clientele of the public schools was increasingly derived from the less privileged segments of society because of two factors: the expansion of enrollment and services, and the tendency for the more privileged families to send their children to private schools. The public school system was ill-prepared to properly communicate with its new clients, the children of the poor; the pupils in turn, were ill-equipped to deal with schooling to their best advantage.

Concurrently, the proportion of children from more privileged homes attending private schools increased both absolutely and relatively. This trend continued throughout the entire decade of the 1950's, leveling off at about 11% of total private and public school enrollment around 1963. There were several causes for this tendency. One the one hand, there was the desire of both the existing and the newly developing middle income groups to consolidate their position and to use private education for prestige purposes. There was also a reaction to the real decrease in the quality of the public schools.

TABLE VI

INDEX OF INCREASE IN ENROLLMENT IN THE PUBLIC SCHOOLS, REGULAR PROGRAM 1956/57 - 1965/66

1956/57 = 100

Year	Total (1-12)	Elementary (1-6)	Intermediate (7-9)	High (10-12)
1956/57	100	100	100	100
1957/58	100.9	100.4	106.0	106.4
1958/59	102.8	98.5	113.4	117.7
1959/60	103.5	96.8	120.7	126.0
1960/61	104.3	96.1	125.3	132.3
1961/62	106.4	96.7	128.8	144.8
1962/63	107.9	96.9	128.8	160.2
1963/64	109.7	98.0	128.5	173.2
1964/65	111.9	99.8	128.7	183.2
1965/66	113.9	101.3	131.0	188.9

TABLE VII

INCREASE IN PER CAPITA COSTS, PUBLIC DAY SCHOOLS, 1956/57 TO 1965/66[1]

Year	Per Capita Costs ($)	Index of Increase in Per Capita Costs 1956-57 = 100
1956/57	$ 89.37	100
1957/58	95.73	107.1
1958/59	103.00	115.2
1959/60	107.34	120.1
1960/61	125.59	140.5
1961/62	139.08	155.6
1962/63	152.11	170.2
1963/64	165.07	184.7
1964/65	181.03	202.5
1965/66	200.92	224.8

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[1] Cost per capita based on total enrollment; costs of physical facilities not included.

TABLE VIII

TEACHING POSITIONS FILLED BY PROVISIONAL TEACHERS 1953/54 - 1967/68 PUBLIC DAY SCHOOLS

School Year	Total Number Provisional Teachers	Total Number Teachers	Provisional Teachers as % of Total
1953/54	1,554	9,643	16.1
1954/55	2,082	10,178	20.5
1955/56	2,790	10,779	25.9
1956/57	3,153	11,302	27.9
1957/58	2,940	11,881	24.8
1958/59	3,749	14,142	26.5
1959/60	(no data available)		
1960/61	(no data available)		
1961/62	2,793	14,771	18.9
1962/63	2,370	15,403	15.4
1963/64	2,429	15,957	15.2
1964/65	2,301	16,700	13.8
1965/66	2,273	17,431	13.0
1966/67	2,494	18,672	13.4
1967/68	2,563	19,318	13.3

Note: Concentrations of Provisional Teachers are higher in the Rural Elementary Schools; concentrations after the mid-1950's are highest in the intermediate and high schools, running above the system average.

Source: Data for 1953/54-1957/58, inclusive: Hayward, B, **Toward Comprehensive Educational** Planning in Puerto Rico, Table 2 (Department of Education, Hato Rey. 1958), data for 1961/62 et seq: Preliminary Report on Enrollment by Grade, Level and Zone, Classroom teachers by Level and type of Certificate, First School Month for corresponding years compiled by Division of Statistics, O. P. E. D.

TABLE IX
TABLE VII TEACHER TURNOVER

Gross and Net Teacher loss Expressed as a Percentage of Classroom Teachers in Service at the Beginning of the Academic Year, Public Day Schools

1955/56 - 1966/67

School Year	Initial Number	Gross Teacher Loss (number)	% of Gross Teacher Loss	Re-entrants	Net Teacher Loss (number)	% of Net Teacher Loss
1955/56	11,201	2,623	23%	518	2,105	19%
1956/57	11,251	2,596	23%	1,394	1,202	11%
1957/58	11,790	2,577	22%	1,242	1,335	11%
1958/59	12,538	2,935	23%	1,341	1,594	13%
1959/60	13,233	3,272	25%	1,612	1,660	13%
1960/61	13,847	2,482	18%	1,376	1,106	8%
1961/62	14,771	2,272	15%	1,815	457	3%
1962/63	15,403	2,448	16%	1,743	705	5%
1963/64	15,957	3,509	22%	2,062	1,447	9%
1964/65	16,700	3,613	22%	1,634	1,979	12%
1965/66	17,431	3,600	21%	1,775	1,825	10%
1966/67	18,672	3,627	19%	1,872	1,755	9%

Definition: Gross Teacher Loss – number of teachers leaving employment during school year through leaves of absence, resignation, retirement, death or dismissal.

"Teachers Returning" – teachers returned to system from leave of absence and other sources.

Sources: Teachers Leaving, Teachers Returning, 1955/56 - 58/59, Committee on Human Resources, Preliminary Estimate of the Demand and Supply for Teachers in the Day Schools of Puerto Rico, 1960 to 1975, Table A. (Santurce, n,d,) for 1959/60 - 66/67 Personnel Division Department of Education. All other statistics: Division of Statistics, Office of Planning and Educational Development D.I.P.

Teaching had been predicated upon a set of communication patterns operating between children from the privileged class and teachers from similar classes. At the same time, many features of the school system – including the pre-1948 requirement to teach in English rather than in the Spanish vernacular, made it extremely difficult or even impossible for children from lower class backgrounds to survive in school. Thus, the educability of the newly incorporated segments was relatively low, given the nature of the school system and the teaching to which they were being exposed. This situation was further aggravated by several other tendencies characteristic of the period.

Double Sessions

The continued use of double sessions as a means to accomodate the increase in enrollments meant that a child who completed elementary school in double sessions received only half the instructional time of a child who graduated after six years of a full program. The child completing sixth grade in a double session school had received instructional hours equivalent to those received by a child completing third grade in the single session school.

The problem was made much worse by the tendency for double sessions to be concentrated in "culturally deprived" communities. Thus, those children who required more time to meet minimum performance standards were given the least amount of time and other resources for their elementary schooling.

Teacher Shortages

There was, for a time, an over-all decrease in the quality of the teaching staff and of the curriculum. Tables VIII and IX, showing the increase in the proportion of provisional teachers (those officially defined as incompletely prepared) and the unsatisfactory levels of teacher turnover, illustrate several dimensions of the problem. The demand for more teachers led to a decrease in levels of training and preparation of those entering the profession. The salary schedule remained low in an era when the demand for educated manpower guaranteed higher paying jobs; at the same time, middle class income expectations increased, and the use of the teaching profession as a temporary stepping stone to other employment continued. None of these factors encouraged teacher retention.

Increasing Educational Costs

There was, however, a steady increase in educational costs occasioned by these development.[4] In the first place, it cost more to teach the clientele of the public schools, whose students were coming increasingly from homes in which the parents were themselves uneducated.[5] Furthermore, the expansion of educational services to groups with successively lower levels of living required that some of the resources of the public schools be used to offer ancillary services to these groups, in the form of school lunch programs, distribution of shoes to the needy, transportation, and scholarship aid.

PROGRAM SOLUTIONS TO THE PROBLEM

Beginning in 1960, a number of new programmatic solutions to these problems were initiated, in an attempt to reverse the trend of diminishing returns resulting from previous strategies which simply multiplied the number of teachers, classrooms, and textbooks. These new efforts were intended to increase the depth and improve the quality of the curriculum, improve the training of teachers, and widen the base of teacher recruitment via preservice and inservice training programs. Among the most important of these are:

The "Exemplary School"

Beginning with the secondary schools, a series of integrated objectives and guidelines were established to undergird a program which would serve as an example and a challenge to improve the quality of education. All aspects of education are involved, inquality of education. All aspects of education are involved: curriculum content — with special emphasis on other than traditional subject-matter; staff training and motivation; school-community interaction and cooperation; local initiative and emulation; and the use of new technologies and teaching resources. This program acted as a device for the diffusion of a minimum level of acceptable service throughout a mass educational system.

Special High School Program

The Special High School Program was designed for incorporating new standards of academic performance and content, and stimulating creative and critical thinking in the secondary school curriculum. This curriculum permitted able students to accelerate their progress, doing four years work in three, and permitted significant reductions in class hours per subject, allowing both teachers and students to devote more time to creative activities. The program also broadened, deepened, and individualized learning by providing more study time and increased library and other study facilities. It emphasized making basic materials, original sources, and the like directly available to students. Finally, the program emphasized a wide variety of techniques, including the introduction of seminars and other special types of class organization. This program was incorporated into the Ford Foundation Sponsored Joint Project described below.

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[4] Compare Tables VI and VII showing indices of the increase in enrollment and per capital costs in the public schools from 1956/57 to 1965/66.

[5] Failure and grade repetition rates increased to the point where over half the children required seven years to complete elementary school.

The Joint Project in Curriculum Improvement and Teacher Education

The Joint Project in Curriculum Improvement and Teacher Education, involving the Commonwealth Department of Education and the School of Pedagogy of the University of Puerto Rico, was partially financed by the Ford Foundation. In addition to further development and testing of the special high school program discussed above, this project involved a new teacher training program based on careful selection and a two year, half-time apprenticeship which provided greater contact with teaching and with public school sudents during the training cycle. The program's organization permitted:

–the recruitment of more able students into the pedagogical curriculum by offering financial and other incentives.

—improved self-selection of the teaching profession via the introduction of students to classroom teaching in the fifth rather than the eighth semester of undergraduate work.

–improved teacher training by offering four semester rather than one, of practice teaching under master teachers, and by integrating education courses more completely with practice teaching.

The Joint Project has served as a model, both for the extension of the curiculum improvement to the entire system and for the expansion of the pre-service teacher training internship program. The expanded program began in Fiscal Year 1968 aided by funds from Title III of E.S.E.A.[6]

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[6] The Joint Project devoted considerable attention to adequate evaluation of its two sub-projects. Furthemore, the large number of Title I projects also involved the development of evaluation procedures and applications. Both experiences have been significant in the development of the Department's present program evaluation capability.

Pre-School Education Programs (Kindergarten and Head Start)

There has been a gradual addition of kindergartens to public primary schools, beginning in the urban areas, during the past decade. Head Sart programs have been developed by several agencies. The Department of Education provides Head Start services during the summer months; the municipal government of the city of San Juan, the largest urban area; the Diocese of Ponce, covering centers in several municipalities; and the Evangelical Church of Puerto Rico, which provides services to many parts of the island.

ESEA Title I

Beginning in Fiscal Year 1966, the Department initiated a wide variety of programs financed under Title I of the Elementary and Secondary Education Act of 1965, to improve the quality of educational services to disadvantaged children. All school districts in Puerto Rico are defined as being eligible for Title I funds, inasmuch as low levels of living characterize all geographic areas of the island. The major program areas, each including a number of projects, are:

—massive lprograms of inservice teacher training. These programs include training in technique and special training in specific subject matters (English, language arts, sciences, mathematics) and other means of improving teaching quality.

—the expansion and diversification of educational services: curriculum enrichment, and regional curriculum development laboratories, local centers for study and supervision for inservice teachers; the pre-school programs; projects offering cultural and recreational experiences, programs for the retarded and the gifted child; programs for recovering high school dropouts in late adolescence or early post-adolescence.

—quantitative improvements through an increase in teaching hours. This involved transportation programs, classroom construction, recruitment and payment of substitute teachers, and the use of specialist teachers (specializing mostly in English) to offer a fourth hour of instruction daily in schools organized on double sessions.

—projects designed to provide general improvements in teaching conditions, through the purchase of new materials and equipment, innovations in teaching technology, classroom design and organization, etc.

Post-Secondary Technical Education

Provision for post-secondary technical education, through the creation of the Puerto Rico Institute of Technology, offering two year courses preparing technicians in critical fields.

EDUCATIONAL PLANNING AS A SOLUTION

The Need for Planning

In the quarter century between 1940 and 1965, the Puerto Rican economy grew at a rate which has seldom been matched anywhere in the world. Annual income was ten times greater at the end of this period than at the beginning. Expenditures on public education were twenty-five times greater. Obviously, such increases in rates of expenditure cannot continue. However, it seems equally unacceptable to continue to leave some children without schools, to continue to provide only half-time sessions for those most deprived educationally, to continue to pay teachers less than what alternative employment pays, and to continue using inadequate buildings and educational materials.

Educational planning in Puerto Rico has developed in response to these realities. The history of present policies and programs has been a gradual process of development and institutionalization of planning instrumentalities and of organizations with planning responsibilities, within the context of an increasing commitment to medium and long-range planning, evaluation, and innovation.

Planning and planning-related activities were developed prior to the installation of a formal division of planning in the Department of Education. Many of the instrumentalities actually in use were developed through the collaboration of the Department of Education with the Plannning Board by the former Superior Council on Education, and by the Committee on Human Resources.

The Committee on Human Resources

The Committee on Human Resources was an inter-agency committee organized in 1953 to undertake manpower planning, as a part of economic planning efforts that had begun half a decade earlier. It was later to become the focus of the Commonwealth's initial attempt at systematic social planning. The Committee's principal published work in the area of educational planning was *Puerto Rico's Manpower Needs and Supply*, issued in 1957. In the perspective of the current planning effort the report was significant for several reasons:

–it replaced imprecise and hazy notions of the relationship between the output of the schools, on the one hand, and the quality of manpower and economic progress, on the other, with specific output targets and schedules of requirements.

–it established a major link between economic planning, and educational planning.

–it led to the use of school client-population and retention rate forecasts as standard instrumentalities, and stimulated a series of improvements and refinements in the methodology of such analysis.

–it stimulated an immediate attempt to raise retention rates.

–it pointed up the need to develop measures of the quality of the educational product.

–it stimulated the Department of Education to make its first full study of the possibility of instituting a planning unit in the Department, and to begin to take stock of problems from the point of view of quantitative planning requirements.

The Office of Pedagogical Research of the Superior Council on Education

During the period of its existence, 1942-1966, the Office of Pedagogical Research performed a series of studies on educational problems which helped to orient educational policy and which contributed to the development of several of the Commonwealth's educational planning instrumentalities, especially its evaluation system. The work of the former research office included:[7]

—studies of the characteristics of the client population of the schools and programs for adult education.

–direction of a large scale program for the elimination of illiteracy

–studies in the language arts, with special emphasis on the development of tests of reading proficiency and achievement

–studies related to the development and modification of university entrance examinations, and student achievement tests.

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[7] The reorganization of the higher educational structure in 1966 converted the Council into a body dealing exclusively with higher education in Puerto Rico. The research office was transferred to the University of Puerto Rico. A useful summary of the original office's work is contained in **Dos decadas de investigaciones Pedagogicas,** (Publicaciones Pedagogicas, Ser. 2, Num 27) Rio Piedras, 1965, published by the Council.

—studies of the effects and potentialities of radio broadcasting.

—studies of human resources, devoted to the existing supply of college educated manpower in the late 1950's; this work was closely related to the manpower studies performed at the same time by the Committee on Human Resources.

—projections of enrollment in public and private elementary, secondary, and higher, educational institutions.

—a massive study of the Educational System of Puerto Rico, commissioned by the Legislature in 1958, including an exhaustive inventory of problems, students, staff, curriculum content, program services and the organization of public and private education at all levels.

—enrollment projections. A projection of enrollments was included in the 1958 study of the educational system. In 1963/64, a series of enrollment projections were prepared in conjunction with the Planning Board and the Department of Education; the former provided the official projections of population which the enrollment forecasts used as a point of departure, while the latter adopted the projections as a planning basis.[8]

Current Perspectives

By the early 1960's, then, and before the establishment of the Office of Planning and Educational Development in 1965, the following aspects of educational planning had already been essayed in Puerto Rico

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[8] The tables forecast grade by grade enrollments, graduates, dropouts and enrollment ratios at the pre-school, elementary, secondary and university levels of the public and accredited private school systems. For each of these parameters three projections were accepted from among a larger number of calculated alternatives. They were selected to represent minimum, expected (official policy), and optimal levels of service and output. The method used: the Planning Board's Official population projection, issued in 1962, was the point of departure. There were three such projections, whose major differences resided in different assumptions concerning emigration and its effect on demographic size and composition. Beginning with an estimate of the population of six year olds, an initial enrollment index was prepared on the basis of historical trends, controlling for grade repetition (in the first grade only). Retention rates were then applied to the estimate of first grade enrollment in order to derive grade-by-grade enrollments and statements of the number of graduates. Cumulative retention rates for elementary and secondary schools in five brackets were calculated to cover the period 1965- 1980; from these, specific grade rates were calculated which would meet these estimates. In each case, three projections were made. Calculations of enrollment ratios — the proportion of the school-age population enrolled at each level — were also prepared and projected as a check on the forecasts based on retention rates. Separate projections for university enrollments and pre-school enrollments were also computed.

–human resource analysis, i.e., determining the need for, and supply of, persons with various levels and types of education in the economy.

–forecasting of enrollment, retention, graduation, and drop-out rates, and similar projections.

–individual evaluation by means of achievement tests; this means was later adapted to program evaluation requirements.

—organization planning, leading to the establishment of junior college and pre-school installations, and later to the development of regional administrative offices and regional insitutions for teacher training, curriculum development, etc.

–forecasting of teacher, and other resource availability trends.

–forecasting, planning, and scheduling of school construction.

This efflorescence of various aspects of educational planning activities in the Commonwealth had several sources. In part, it reflects organizational specialization in a very large, integrated, school system.[9] Other aspects grew out of a basic interest in economic planning, forecasting, and programming of public-sector activitities common to all Puerto Rican government agencies. Present, also, has been a belief in planning as a desirable element of public administration.

However, the principal policy justification for planning today is its absolute economic necessity. Without successful educational planning Puerto Rico cannot organize and distribute its limited educational resources in a fashion which will meet its educational goals.

Briefly stated, the goals of our planning system, deriving from this basic policy requisite, are to:[10]

–develop procedures which will allow the department to evaluate the effect of actual or potential educational tactics (i.e., various combinations of different teaching techniques and teaching equipment, curricula, physical facilities, forms of school organzation, personnel specialties and qualifications) upon optimal and maximal educational outputs (measured fundamentally in terms of actual learnings, and retention rate targets).

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[9] Among American systems, only New York City's is larger.

[10] Major public speeches of the Secretary of Education reflect and describe images of the well-educated citizenry, which are actual goals of the school system, but which are beyond the scope of this brief discussion.

—develop procedures which will permit the Department to allocate its basic resources among these combinations, increasing the quality or effectiveness of the more elastic resources (e.g., teacher qualifications, etc.), and optimally investing the less elastic resources.

—develop procedures which will link present and future schooling to present and future parameters of the society, economy, and polity in a fashion which will allow people socialized through the school system to most effectively and rewardingly adapt to, and mold, changing socioeconomic circumstances.

Office of Educational Planning and Development

The Office of Educational Planning and Development, headed by an Assistant Secretary of Education, was organized early in 1965.[11] It is charged with following major responsibilities:

—advise the Secretary of Education, and the directors of operational and service programs, concerning the planning of an integrated and comprehensive educational policy.

—perform those studies (of academic, fiscal, and social affairs) needed to systematize and implement the department's planning function, and to develop a comprehensive picture of Puerto Rico's educational realities.

—collaborate with other agencies of the Commonwealth, especially the Planning Board and the Bureau of the Budget, in formulating long-range development plans for providing educational services in harmony with Puerto Rico's actual needs and resources.

—program the utilization of the Department's fiscal resources, including both capital and operational expenditures.

—develop a system of continuous evaluation of the programs carried out by the Department in order to determine their educational efficiency, to diagnose and identify problems and difficulties, and recommend solutions.

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[11] As mentioned above, planning instrumentalities were developed and effectively used before this organizational innovation. The office itself had been recommended in a series of consultant and staff reports and memoranda stretching back almost a decade. These documents, although agreeing on the desirability of creating such an organization, did not coincide as to the specific responsibilities it would assume. But the actual limiting factors on these proposals were (a) financial and personnel limitations, and (b) state of-the-art limits on planning instrumentalities. The best known studies were those prepared by Beresford Hayward (**Toward Comprehensive Educational Planning in Puerto Rico,** 1958) and Osvaldo Rodríguez Pacheco (**Some Aspects of Educational Planning in Puerto Rico,** 1963).

—develop, compile, analyze, interpret and publish statistical and other studies concerning public education and educational services.

The activities of the Office are distributed beween two subdirectors, charged respectively with responsibility for Economic and Technical Programming. Three units (the Evaluation Division, the Statistics Division of Physical Planning of Research) are assigned to the latter; the Budget Division of Physical Planning to the former.

Division of Evaluation

The Division of Evaluation traces its history in the Department from 1928. It was originally organized as a joint operation of the Department and the University of Puerto Rico. Is first function was that of adapting achievement and intelligence tests, designed and standardized in the United States, to Puerto Rican conditions. Much effort was devoted to develop diagnostic and vocabulary tests aimed at improving the teaching of English. In fiscal 1938/39, the joint service was reorganized as the Bureau of Research and Statistics of the Department of Education, emphasizing again the use of standardized tests. Efforts were devoted to the development of reading proficiency examinations, and measures of non-verbal general ability. In 1949/50, another reorganization created the Office of Pedagogical Research and Statistics, charged with the development of educational research, measuring school performance, and publishing basic statistics.

In 1957, the Office of Evaluation was organized, as part of the Office of the Secretary of Education, continuing the emphasis on the development and application of standarized tests. In 1965 it was transferred to the new Office of Planning and Development, and its functions began to take new directions. It became a general evaluation office, charged with evaluating all of the general and special projects of the Department.[12] Of special importance is the responsibility of carrying out the evaluation of all projects financed in Puerto Rico under Title I of PL 89-10. This task is very complex since all Puerto Rico's school age population is considered eligible for Title I project funding, so that the geographic and demographic extention of Title I projects include every public school, school teacher, and pupil in the island. The computer-based system being developed to carry out this evaluation forms the nucleous of the general data system which, in turn, is one of the essential elements of the Department's overall planning system.

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[12] Including, for example, the Ford Foundation projects mentioned above. The new orientation is reflected in the official definition of responsibility: "Develop adequate instruments for determining the yield of the effort and resources invested in the department's programs, measured in terms of school achievement and other indices, which permit the assessment of the product of educational activities . . ."

Statistics Division. The present Statistics Division was originally organized to compile statistics on enrollment, attendance, teacher preparation, and other factors. The information was used to prepare periodic reports and special quantitative analyses. The range of information and the resources available to the division were widened considerably under Title X of N.D.E.A. It also began to take on the functions of short-range enrollment forecasting, adapting various long-term enrollment projections originating in other government agencies.[13] Its present development target is a statistical reporting system which will provide a flexible, detailed basis for educational planning.

Division of Physical Planning. The Division of Physical Planning (formerly the Division of School Planning) initially emerged within the Personnel office of the Department in 1948, charged with performing an inventory of physical plant as part of a Federal project; this project was completed in 1951 and led to the creation of an administrative unit in 1954. Its responsibilities were the location, construction, maintenance and custodial care of schools and other physical facilities. There was no provision for research and innovation in school design in response to new educational needs and techniques. There was a capability, not systematized, for short and medium term projection of population concentrations.

Division of Research,[14] created in 1965, was charged with the development of a program of educational research, coordination of all sources of data concerning the educational situation, and the performance of basic analysis for the elaboration of educational plans and programs. Its major functions, so far, has been that of initiating new planning projects, new research programs, and new planning instrumentalities.

Budget Division. The Budget Division, originally located in the secretariat for Administrative Services, was transferred to Planning and Development as a means to more effective resources programming. In the overall planning picture, this Division, along with the Office of the General Manager, forms the focus of the proposed program-budgeting and cost-accounting system. These are essential elements of the total planning scheme which, taken together with the curricular and behavioral measures of the Evaluation Division, will permit the assessement in detail of alternative combinations of educational inputs.

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[13] The defunct Committee on Human Resources, the Research Office of the defunct Higher Council on Education, and the Planning Board.

[14] Research on education in Puerto Rico is performed by two organizations in addition to the Department: the Center for Pedagogical Research of the University of Puerto Rico, and the Social Science Research Center of the University's College of Social Science. Within the Department of Education, a separate office of research related to vocational education has been established.

THE "STATEMENTS OF EDUCATIONAL NEEDS," 1965

Soon after its establishment, the Office of Planning and Development issued the "Six, Eight, and Ten Year Statements of Educational Needs," a set of schedules of resource requirements for meeting some of the classic educational goals. These statements served to drive home again, the same two points:

—the inadequacy of existing resources.

—the even greater inadequancy of existing programs.[15]

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[15] The statements were relatively simple: The 'official' projection of enrollments in the elementary and secondary schools provided in 1964 by the Superior Council on Education was used. The number of additional teachers and classrooms required to provide a full-time school day and school year for all students in the elementary and secondary schools were then calculated. The increments required were stated in terms of four factors, i.e., requirements to meet the increase in enrollment, to eliminate half-sessions, to eliminate interlocking sessions, and to eliminate teacher absences (substitute teachers).

Requirements to provide a minimum quality of instruction for all schools, based on the standards of service used in the Exemplary Schools, were also stated. These requirements were stated in term of additional teachers, other personnel, and facilities needed for pre-school programs, inservice teacher training time, programs for slow and advanced students, programs of art, music, theater, physical education, library, auxiliary personnel, and facility renovation. These statements were made in terms of annual increments of teachers and classrooms.

Calculating from projections of income accruing to the Department, the number of years necessary to add enough resources to meet these minimum targets was estimated to be ten years.

CHAPTER 2

The Information and Evaluation Planning Systems

A 1968 PERSPECTIVE

Organization of the secretariat for Planning and Development thus grew out of the recognition that the resources available for education were not adequate to meet the needs. From the previous account, it is clear that a great deal of planning had preceded this recognition, had in fact helped to bring it about. As previously noted, this was not the first time the idea of a planning secretariat had occurred to any one. It was, however, the first commitment by a Puerto Rican Secretary of Education to a major attempt to solve the educational problem by means of planning, research, and development. As such, it involved more than merely an organizational unification of what previously were somewhat independent elements of a potential planning system.

A substantial analysis not only of the problem, but also of some of the required elements of a solution, preceded this organizational step. If planning were to lead to a reallocation of resources, in a form which would yield more educational output per unit of investment, what would have to be done? First, the product of the educational system would have to be defined and measured. Second the major kinds of educational investment would have to be defined and measured. Finally, the significant relationships between various investments. or inputs of the system, and its outputs, or products, would have to be discovered, so that by shifting resources from one use to another an improvement in ouput could be predicted.

The products (outputs) of a school system are its graduates and dropouts. These are not too hard to count, but in addition to their numbers we need to know something about their characteristics. We need to know how much they have learned, how employable they are, how much they can earn, what kinds of parents, what kinds of persons, they become. None of these are unimportant, none are easy to define or to measure. A system for evaluating these characteristics of graduates and drop-outs is clearly needed as part of a planning process, but what kind of a system would it be? Formulating a complete answer would obviously take forever, but partial answers are not hard to find. Reading ability, mathematical ability, knowledge of science and the humanities, and vocational skills are certainly some of the outcomes we expect from school attendance. Measuring instruments available for some of them were already built into our evaluation systems; others could be.

Economic returns from investment in education had been measured by T. W. Schultz and his students. Citizenship, parenthood, and personality are harder to define, and have not been as systematically measured as have economic characteristics, nor have they been quantitatively treated as products of education. In principle, however, this is possible, and in fact we know quite a bit about relationships between years of schooling and voting behavior, number of children per family, children's success in school, personal interests, social activities, and consumption patterns.

To summarize, Puerto Rico had made a start in measuring its educational output. We would have to develop our evaluation system, initiate local studies, like those of T. W. Schultz, and design other kinds of student follow-up studies and social surveys.

Some of the major inputs of the educational system are easy to define. Teachers, classrooms, books, buses, are easy to count and not too hard to characterize. Students are much more difficult to characterize, partly because they enter school at an age when testing is not as routine as it later becomes Programs are harder to specify — even if they are defined in such terms as students, teachers, facilities — partly because time, and temporal as well as spatial order, must be considered along with these other components. One of our immediate practical problems in relation to inputs was the lack of a cost-accounting system, not only in Puerto Rico, but elsewhere in educational institutions. Since money-cost is one, and a vital, common denominator of educational inputs, cost accounting was obviously an indispensable element of a planning complex.

Another requisite was some system of measuring the effect of home, class and community on the learning potential of a student. We know from the Coleman report and other data how important this influence is, and it is obviously important to have an independent measure of it if the effects of schooling and the educational effects of home and community are to be disentangled.

The essential elements of a successful educational planning system, one which actually results in more efficient education, were not fully defined at the time the Planning and Development Secretariat was organized in 1965. They may never be. We did at that time, however, recognize the need for the following necessary, if not sufficient, components of such a system:

—an expanded capability for achievement and attitude testing.

—local studies of economic returns to education.

—continued analysis of the occupational requirements of the economy.

—extension of human resources methodology to non-economic roles.

—systematic studies of such input categories as students, teachers, buildings, didactic equipment and materials, and programs.

—cost accounting.

—computer capacity sufficient to include and inter-relate the data systems implied above.

—mathematical models which could simulate the educational system and be used for resource allocation and research guidance.

—a continuing research program.

The rest of this chapter describes the approximate stage of development reached in the above areas at the time the Comprehensive Planning Project began. The material is presented, not in the logical order of the preceding list of requirements, but in terms of how these requirements were met organizationally.

THE INFORMATION AND EVALUATION SYSTEM

General

The computer-based educational information, evaluation, and analysis system is the central tool in the Department's scheme for planning. This system addresses itself to two basic objectives:

—it helps define the major problems concerning learning and teaching in Puerto Rico, and aids in evaluating and designing programs of action which will resolve these problems.

—it assists in determining the most rewarding pattern of distributing Puerto Rico's budgetary and educational resources.

With its computer servant, this system is designed to put information about educational problems and possible solutions to them at the disposition of planners and policy makers and, eventually, in the hands of any interested person. A complex instrument, it is a means for bringing together, in a single framework, many types of data and analytic routines.

The basic components of the system deal with the major elements of the educational process. The system provides historical information and projections concerning the present and future conditions of:

—pupils.

—staff personnel.

—facilities.

—programs (curricula projects; administrative, staff, and ancillary services).

—finances.

In cooperation with other Commonwealth agencies, the system incorporates information which helps set goals for the public school system by determining some of the educational requirements of the society concerning:

—population.

—the structure of the economy and its manpower needs.

—personal incomes and productivity.

This new capability widens the range of the dialogue in which planners may engage. The Educational Data Processing Center, in replacing existing manual methods of data storage, retrieval, and analysis, makes many kinds of planning economically feasible. The system considerably shortens calculation time, and makes possible relatively complex data analysis at an acceptable level of cost. It will operate as an analysis and evaluation adjunct to field experiments, or as a pure simulation tool.

It will assist in managing the Department of Education's many and complex routine operations and in making them more efficient. But its most important function is that of increasing educational effectiveness. Here, the system is a means to help us determine the best strategies of teaching and learning, and the way in which we must organize staff, students, and material to support these strategies. As such, it is an instrument — albeit not the only instrument — which can effectively address itself to such questions as:

How many students must we educate in the future? What should be the content of the curriculm? What kind of teacher should teach it? In what way should he or she teach? To whom? How *much of each subject? How much student and teacher time should be devoted to each objective? When? In which schools? How much money should be spent on teachers salaries in a given year? On scholarships for teachers or students? On classrooms? On auxiliary instructional equipment? On books? Which books? Which teachers merit promotion? How best can the abilities and skills of teachers in service be maintained and developed? What should* they *learn?*

It is important to recognize that, while such questions can be answered, the answers will satisfy only those who accept the premises underlying the calculations. What these premises can include is in turn dictated by the conceptual, informational, and analytical apparatus available. The development of an information and planning system is a program for extending the kinds of answers that can be given the above questions and, thus, to widen the group willing to accept these answers. One measure of a planning system is, thus, the acceptability of the answers it can provide.

ORGANIZATION OF THE SYSTEM

Basic data are collected from schools, district offices, and other operating units, and transmitted to the computer center. The information system operates in terms of several subsystems, each with its integral procedures for data collection, storage, and retrieval. Separate information systems exist for staff, pupils, facilities, programs, and finances, and the computer system is organized to make it possible to interrelate information from them. Data extracted from the pupil, staff, program and finance files will tell, for example, which students are enrolled in a specific course or project, how well they are doing, and how much it costs to provide these services for them.

As noted above, the initial development of the computerized evaluation system responded in part to the need to evaluate Title I projects. The initial development of the financial information system, was partially in response to the need to meet U.S. Office of Education accounting requirements concerning projects and activities developed under PL 89-10. Since these are priority requirements, the system will not reach its full capacity to assist the general planning process during its first few years.

PUPIL INFORMATION SUBSYSTEM

This is the most important and the largest file of data. After the establishment of the system, this subsystem will contain information on all children who attend public schools, Head Start, and other pre-school programs in Puerto Rico. At present this file merely identifies children through a student number. In the future, it will be expanded to include items of information found desirable in order to meet the basic purposes of the file, which are to:

–replace the cumulative record card currently kept on school children, by including information on grades, standard test scores and performance on other test instruments, medical examinations, attendance, and other pertinent factors.

–provide information to assess those elements of the child's out-of-school experience which have significant effects on learning in school. This includes information such as the occupation and income of the child's parents, residence, place of birth, and characteristics of his home and community. This identifies the child as a member of a household, about which vital information will be stored elsewhere.

–provide information in a way which permits the Department to compare the achievement of the child with his brothers and sisters, other children in his community and school district, and with any other person who attends or has attended public schools.

–provide information on the curricular, co-curricular, extra-curricular, and supplementary education *programs*, to which the pupil has been exposed[1] and the projects in which he has participated.

–provide an identification number so that we can follow the child's career if he moves from school to school and, through information concerning employment, income, and jobs after he leaves school.

When extended to include follow-up data,[2] this file will enable us to tell what the actual pay-off of the school is. It will tell us the amount and kind of schooling completed, the actual learning that took place, the individual's subsequent history of jobs held and income received. This file will also permit us to tell what influences, both in the school and out of the school, affect the achievement of children. These data, in turn, will permit us to evaluate and manage programs, projects and staff.

Apart from its aid to planning, this information system, if properly used, offers unique opportunities for the educational and career guidance of each student. It would be an element in actually making possible the individual treatment of students which is so highly recommended in theory and so little observed in practice.

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[1] The program or educational context files, and the project files are discussed below.

[2] Integration with Employment Service files is one possibility; with a proposed Commonwealth Household Data Bank is another.

What the pupil file will not do by itself is, among other things, to extend the scope of student experience, or the limits of educational psychology. Its usefulness will still be limited by what we put in it, and this in turn will be limited by what we are able to do for the student and what we are able to get from him in the way of information. We have no present plans, for example, to systematically vary the order in which educational tasks are assigned, or the amount of time given each subject, or the rewards and punishments impinging on the student.

STAFF INFORMATION SUBSYSTEM

This system will operate with data concerning each of the active teachers, principals, supervisors, and technical personnel in the school system. At the present time, payroll data for all employees of the Department of Education has been automated; later, more complete information will be included, at least for professional and semi-professional personnel. The purposes of the file are to:

—replace existing record-keeping procedures.

—establish a basis for the assignment and scheduling of teachers, taking into account teacher skills and preferences, the availability and location of physical facilities, and the needs of different segments of the student body.

—provide information on the programs and projects which the staff member serves.

—provide information concerning the actual functions performed by teachers and other personnel, and the amount of time devoted to these activities, in order to facilitate cost-accounting.

—provide information which permits planners to compare the effectiveness and performance of teachers (and other personnel) for various significant characteristics (such as training, experience, social and economic status, classroom style), as well as to discover other characteristics which are of significance for these purposes. It will also permit the development of this information in a fashion which yields conclusions concerning the kind of teacher best suited for effectively teaching students of different backgrounds and for making teacher assignments on this basis.

—provide information for the formal evaluation of the performance of individual teachers, and of the programs and projects in which they have participated.

—provide information which will permit planners to forecast the need for the various skills required by the department, their future availability and the best means for training present and new staff to meet these demands.

Like the pupil information system, the ultimate role of the staff data apparatus is that of a tool for assessing the concrete costs and gains of the school system, placing emphasis on the kind of staff member who gets the job done best. Its most important contribution lies in finding, for example, the kind of teacher and the kind of teaching which is most effective, and the number of such people who will be needed. Its information will also have great value both in (1) determining those policies concerning selection, training, promotion, assignment, and career-rewards which are best suited to encouraging the most effective teaching and in (2) deciding where and how to channel investments in the professional staff of the public school system.

As in the case of the student file, the kind and quality of the inputs will determine the actual value of the staff file. In order to record what teachers actually do, for example, we will need observation systems not now in operation. And in order to know what a teacher ought to do, we will need conceptual systems still to be developed.

FACILITIES INFORMATION SUBSYSTEM

The data processing center will also store information concerning the nature of facilities available, their location, and their distribution among operating schools. This will include:

—basic fixed capital, i.e., the location, type, construction materials, and cost of existing classrooms, lunchrooms, lecture halls, offices, and those under construction. As the design of classrooms in use becomes more flexible and adapted to new curricula and teaching methods, the need for up-to-date information on this type of facility becomes more acute.

—built-in school equipment (laboratory and shop facilities, and other fixed instructional aids and materials), their location, capacity, age, cost, and utilization.

—movable and non-consumable instructional equipment and materials (books, films, tape recordings, projectors, typewriters, computer terminals, typewriters, etc.): their temporary location, cost, utilization, age and type.

Two separate dimensions are used in identifying the location of a facility. First, there is a code number which locates the site of the equipment -- a fixed point in space. Second, there is a code number which allocates the equipment to an operational school unit,[3] in the same fashion that staff and students are assigned to operating schools, according to a master file which the data system constantly maintains up-to-date.

As processed through the evaluation and accounting systems, this information will be used to project and appraise the location or relocation, selection and acquisition of the entire physical apparatus employed by the Department of Education. The accounting system will use it as the basic property inventory file. This assemblage of data will inform planners as to what facilities are available, or *not* available, in specific places, to specified groups of students and teachers. It will help discover what facilities will be needed in each district and at each school site, decide how best to schedule the use of existing plant, and determine future sites for schools. Thus, it may be more readily decided what kind of facilities, in what quantity and at what cost, are needed to meet future demands and to replace obsolete equipment. This information subsystem will also provide periodic reports on the construction of new plant and the acquisition of new equipment. Furthermore, decisions concerning the design and selection of physical facilities can be made on the basis of a complete evaluation of the educational effectiveness of various types of facilities.

Drawing upon the files concerning facilities, staff, students, and programs, fór knowledge of the exact utilization of facilities – by whom, in what kind of combination with curricular elements and programs, for knowledge of the exact utilization of facilities– is a basic step in the process of evaluating the educational effectiveness of these operations. The same process will also yield conclusions as to the cost of such operations. This will permit us to answer such questions as: What kind of laboratory and classroom equipment obtained the best results? Which books or combination of books made available to students in a given grade in a given type of classroom organization were most effective in assisting their learning to read or write or master the content of specific subject matter?

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[3] An "Operating School" is defined as: a single school environment comprising a principal, a group of teachers responsible to that principal, and a group of students responsible for attaining the objectives outlined by the teachers. Generally, this single organizational unit utilizes the facilities of a given school plant; generally, also, these facilities are located at the same site. However, several such units may use the same plant, and one school may utilize facilities at more than one site.

It is important to remember that, although the analytical procedures make it possible to state cost in dollars and the effectiveness in terms of learning and other benefits of a given kind of facility, the facility is not being assessed alone. What is really being assessed is the use of a specific type of equipment or plant feature, in combination with a certain kind of teacher, in combination with a certain kind of teaching technique, in combination with certain program elements. The evaluation system treats educational strategies, not isolated factors.

PROGRAM INFORMATION SUBSYSTEM

In order to analyze and evaluate the degree to which factors in the educational environment contribute to educational progress, it is necessary to specify clearly their components and the costs related to them. This includes all activities, curricular and otherwise, performed directly for students, as well as those activities carried out in support of such operations. With respect to certain programs the information developed for this purpose will include:

—what was done to and for each student.

—how it was done, where it was done, by whom.

—how much it cost to do it in money and in time.

—what the intended effect was of these services and activities.

—what was the actual educational effect of these activities (this will require using a carefully elaborated set of evaluative procedures and patterns)

This concept of program information includes all of the planned elements of the educational environment, not only the subject matter course offerings, but also services whose facilitation of learning may be relatively indirect. Full development of this sub-system will require the joint use of three important elements of the data system: a file concerning the content and evaluative procedures of each project funded in Puerto Rico under Title I of P.L. 89-10, a file component of the pupil data system which describes courses, and the cost-centers of the accounting system. These subsystems are decribed below.

Curricula. Currently, the information system can classify some 825 courses. This information is coded in such a way as to indicate the program area, grade, level, and subject matter of the course.[4] Thus, the computer can report:

–which courses a student has taken.

–where and when they were taken.

–who taught them to him.

Further elaboration of the system will add cetrain details:

–how the subject was taught when there are different syllabi, textbooks, etc., for the same course (for example, the "new" secondary school physics)

–a statement of the objectives of each curriculum element, and of the evaluation procedures established to test the degree to which learning, and other aspects of student performance, meet these objectives.

It will also be possible to calculate the costs associated with these curricular components.

Projects. This component of the program information system was originally designed to provide the data needed to evaluate the 60-odd projects funded under Title I of PL 89-10. It can be expanded to include the base for evaluating any project organized by the Department, for example, the "Guide District" effort and its sub-projects, funded under Title III of the federal Elementary and Secondary Education Act. This file remains a separate element because, given the scope of many projects, it is necessary to be able to evaluate the project as a whole, rather than merely the activities which compose them; it is also necessary to meet Federal reporting requirements concerning Title I. Data available through the file will equip the Department to:

–determine the degree to which the goals of each project are fulfilled.

–assess the effects of each project on teaching and learning.

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[4] These are the 23 major program areas covered in the curriculum:

Kindergarten
Mathematics
Spanish
English
French
Science
Social Studies
Fine Arts
Schools of Music
School Theater
Mentally Retarded
Gifted Students
Physical Education
Aerospace Education
Adult Education
Technical Education
Trades and Craft
Industrial Arts
Agriculture
Commercial
Home Economics
Health & Hygiene

These programs run the full range from pre-school to post-secondary levels.

—find the costs of each project.

—compare the cost and the effectiveness of different projects.

This will be accomplished by:

—comparing the facilities, staff, pupils, and costs involved in a given project with those involved in comparable units not receiving special treatment.

—comparing facilities, staff, and pupils participating in one project with those participating in another.

—comparing the effects of different projects upon comparable sets of facilities, staff, and pupils.

In its final form, this file will specify items of information — themselves actually stored in other files of the system — needed to evaluate and control a specific project. The project file will store only the data needed to identify and describe the project itself. Basic parameters include the objectives, activities, and duration of the project; the districts, schools, staff and students participating, the source and amount of funds involved, and the norms, standarized tests, questionaires and other techniques used in evaluating the project.

Finances. There are two objectives for the establishment of a computer-based financial information system. These are:

—developing a financial management information system for budgeting and accounting purposes within the Department of Education.[5]

—instituting a basis for cost analysis, and benefit-to-cost studies, of the educational activities carried out by the Department of Education.

Meeting these objectives requires that the financial management and reporting system developed for budgeting and accounting purposes be organized so as to facilitate program costing and evaluation at the same time. In order to this, the data system is being elaborated to provide information on:

—financial transactions, providing accountability for all dollars received and spent.

—what has been acquired or performed through the expenditure of these dollars. This implies the capability of relating these financial and accounting data to the specific items of information processed through the systems concerning pupils, staff, facilities, and programs. This capacity tells the planner:

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[5] As mentioned in our discussion of the development of planning instrumentalities, this new fiscal management and reporting system was initially developed partly in response to the need to meet certain reporting requirements of the U.S. Office of Education.

—what was done with the money, e.g., how many books were bought, who used them, in what program.

—what were the educational effects of this consumption of resources.

All of the Department's accounts have been reclassified in order to implement these reporting requirements. The diverse accounting and financial control responsibilities of the organization were centralized under a single comptroller.

A system design involving seven subsystems for the processing and circulation of information was adopted. These computer "packages" cover:

—Appropriations and Accounts Payable

—Payroll

—Inventory

—The General Ledger

—Fixed Assets

—Accounts Receivable

—Cost Responsibility Centers

Basic information in cost-responsibility centers will, as the system becomes fully developed, include:

—a center designation for each program component, project, and activity undertaken within the department.

—a time budget for major program activities and system inputs. The most important of these will state the proportion of working time devoted by various personnel categories — to specific program components, and task functions. Time can further be used as an input factor by itself, in constructing indices of levels of service. Measures of the time spent by staff members on various functions can be translated into percentages of salary, in order to perform uniform cost analysis.

Summary. The ultimate aim of this program information system is to be able to treat all of the identifiable activities of the department in the same fashion as the model sketched in these pages for evaluating and costing Title I Projects. The major objective of program information is benefit-cost analysis, to the extent that such analysis is possible in education. Insofar as different approaches to achieving the same objectives are being tried, program evaluation will permit us to measure the effectiveness of such alternative approaches to major educational goals. Information concerning costs will yield a concrete way of comparing programs, according to the amount of money expended per unit of output. It will also be possible to measure the performance of operational units – schools, classrooms, districts – on the same programs.

This sounds very impressive, and in the long run this system should yield impressive results. Yet there are several caveats, discussed in greater detail in Chapter 3. For example, the greatest danger is the temptation to try to measure everything, correlate everything, and simulate everything. As for the "long-run" aspect of the system's productivity – some perspective on how long this may take, is provided by repeating some of the questions educational planners face, e.g.,

–what should be the goals of the system?

–what should be the priorities among goals?

–what shall we do for children who are not learning?

–what shall we do for Johnny today?

EDUCATIONAL SIMULATION MODELS AND THE PLANNING SYSTEM

After examining many educational simulation models, of various types, the Puerto Rican Department of Education concluded that implementation of any but the simplest kind would require data which were not available and which it would take much time and money to obtain. In consequence a very basic type of simulation model has been programmed for the computer with the intention of elaborating it as additional data become available.

The sub-systems of the present model are:

–a student-flow and enrollment model.

–a staff requirements model.

–a facilities requirements model.

–an educational costs model.

Each of these sub-models consists of a set of procedures, or computer programs, by means of which some future hypothetical state of the school system[6] can be simulated. The student flow and enrollment model, for example, consists of procedures for calculating the future enrollment of each grade, given the number of students entering the first grade and a schedule of promotion, grade-repetition, drop-out and re-entry rates. New entrants to the first grade are calculated by the computer from population data as a by-product of this sub-model and the educational composition of the out-of-school population is also calculated as a by-product of this sub-model. These data provide a tie-in with a computerized manpower demand model of the Puerto Rico Planning Board.

The staff and facilities sub-models first calculate teacher and classroom requirements based on student flows, and on assumed pupil-teacher and pupil-classroom ratios. These ratios can be separately set for various school levels, various types of school organization, and, in principle, for any part of the school system which might have special needs. Requirements for non-teaching staff and for non-classroom facilities are currently calculated as derivatives of teacher employment and class-room use, but a slightly more elaborated model could calculated them directly from student flows. Costs are for the present, as calculated from salary and construction cost -schedules and other price lists. Completion of the cost accounting system will make possible more sophisticated cost estimates.

The present model does nothing that was not done before, except to combine in automatic sequence calculations which were previously performed separately. The advantages of combining and computerizing these calculations is, nevertheless, very great. We can do in an hour, at a cost of a hundred dollars, what used to take years to do, at a cost of tens of thousands of dollars. Certain estimates generated by the model had been made only once before, because of the cost in time and money. They can now be repeated whenever anyone wants to introduce a new assumption, or an improvement in the baseline data. In an hour it is possible to determine what the implications of the change are for a great variety of factors and for any time in the future where assumptions are desired.

It is important to stress that the information obtained from the model depends upon the assumptions fed into it. Some of these are not very doubtful — for example, that birthrates will continue to follow the gradual downward trend of the last twenty years, that teachers salaries will continue to increase. None of these are, of course, certainties over a long period of time. When to quantify these assumptions, as we must and specify exactly how much a given rate will change, we are sure to be at least slightly wrong. But the purpose of the model is not to predict the future. It is, rather to tell us how much difference something that might happen next year would make in the future, if it happened. This is specially important for happenings which are subject to policy decision. The real purpose of the model is to tell policy makers explicitly what will happen if they do this or that, making whatever assumptions seem reasonable about what else will also happen.

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[6] Of the public day, and private accredited, schools.

While the present model is very simple and unpretentious it can be elaborated in a number of directions. It can, for example, be made more precise and sophisticated either by improving historic data series or by improving the detail and accuracy of cost accounting, achievement testing, economic forecasting, demographic analysis, or other parts of the model. The model can and will be progressively disaggregated by geographic region, by educational subject matter, by class of student, and in many other ways. We can also build in new aspects such as achievement test scores, using historic averages by age, sex, social class, school level, subject matter, or, if desired, using assumptions rather than historic data. If we do this, our present model will become an output/effectiveness function[7] model by definition, but one of a very primitive kind, not the kind one usually thinks of as belonging to this class.

A true output/effectiveness function model should contain some assumptions based on educational theory. The one in use presently in Puerto Rico does not. If this model tells anything about the effect of pupil-teacher ratios on pupil achievement it will describe only what was programmed into it in the first place. This is true of any model in the sense that once the axioms of a mathematical system are written, everything that will ever be discovered in that system is already implied. A true (and good) output effectiveness function model is like a good mathematician. It will discover new implications derived from basic assumptions. However, the model in use in Puerto Rico will do that only in a trivial sense. If, on the other hand, we have some true knowledge about the relationship of certain educational inputs to student achievement, our model could estimate the cost and some of the benefits of improving achievement levels by means of these relationships.

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[7] A discussion of types of models for educational planning appears below, as Appendix 3.

PLANNING INSTRUMENTALITIES AND THE PRODUCTS OF THE INFORMATION SYSTEM

The immediate products of the information system – after the information is processed – are evaluations, analyses, projections, reports and studies, i.e., planning instrumentalities actually used in the formulation of policies. These planning instruments integrate materials provided by the Department's information and analysis system with data and analyses provided by other executive departments.

The planning instruments in operation are listed and briefly described below. Taken together, these instrumentalities constitute the planning system as it actually operates, or as it will operate when planning instruments now under development become fully operational,

In summary, these aspects of the planning system are:

–Bookkeeping and routine reporting

–Basic analyses of costs

–Manpower requirements, and economic growth projections

–Projections of student flow and enrollment

–Estimates of the availability of staff and facilities

–Cost projections

–Projections of departmental revenue

BOOKKEEPING AND ROUTINE REPORTING

Reports on the operational and financial status of the principal components of the educational system are issued periodically or upon demand. They can be generated, for any significant unit or level of organization, i.e., for Puerto Rico as a whole, by regions, districts, school or classrooms. Topics covered by these reports include: facilities under construction and dates of availability; condition of facilities; transactions, transfers, loans, acquisitions and inventories of equipment and facilities; equipment and operating school utilization; master staff or student rosters; project status, progress and evaluation reports; test scores, grade, and other meaures of pupil performance; pupil report cards and transcripts of record, budget status, utilization of funds and fund availability; payrolls, and personnel records and certifications; staff qualification lists, and so forth. These reports will be used for guidance and control of all departmental operations.

BASIC COST ANALYSIS

Periodic factor cost reports will be generated, when installation of the new accounting system is complete. These will include costs for each of the major educational inputs, e.g.,

–Costs per student, per teacher, per facility, or per program or function

–More detailed breakdowns of costs by factor or organizational level (e.g., costs per secondary school teacher, or costs per secondary school teacher in selected districts)

–Costs for a combination of any of these factors

MANPOWER ANALYSIS

Responsibility for analyzing the manpower needs of the Puerto Rican economy lies with the Bureau of Economic and Social Analysis of the Puerto Rico Planning Board.[8] The Planning Board forecasts the growth of the Puerto Rican economy, and its component sectors and industry groups, using an input-output model of the economic system. Growth patterns can be translated into manpower requirements by projecting the occupational composition of each industry group; total demands in each occupational group can be obtained by summing the employment projections for the occupation in all industries. Recent procedural and conceptual refinements allow the Planning Board system to project employment for about 100 selected occupations in roughly the same number of detailed industries.

The projected detailed occupational needs of the economy can then be translated into estimates of the educational levels required to sustain the desired level of productivity. Given this educational profile, which will be required of the men and women in the labor force, output targets may then be derived for the various educational programs.

Manpower planning yields several guidelines and targets for the educational system:

–a set of *output levels* which should be reached by the various educational programs by a certain date in order to provide a labor force with specified levels of educational achievement. At present, it is possible to specify needed outputs from the regular day schools, the adult education program, the special programs for post-adolescent and young adult high school dropouts, and the post-secondary institutions.

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[8] At present this link to human resources planning is the only formally developed tie between the educational planning system and planning for other social sectors; as such, it is the only elaborated articulation between educational and societal objectives.

The General Development Plan, another long-range planning instrument, provides background orientation for the Economic Development model and public sector activity. It is a general scheme setting forth probable trends in population growth, national product, national income, and similar aggregate measures of the economy, projected 10 years in the future. The Development Plan also provides some guidance to the private sector.

–*Personnel for Program Targets.* In the case of the relatively limited number of occupations and occupational clusters where the school system and related institutions actually offer training, it is possible to translate the manpower requirements into specific program targets stated in terms of numbers of specially trained personnel.[9] These are targets for the Technological Institute, the colleges and universities, and – to a limited extent – the vocational high schools and the work-study programs for dropouts. The effectiveness of this type of planning for craft and sub-professional levels in limited because those trained in the vocational schools often find employment at higher levels or in other trades and crafts.

PROJECTIONS OF STUDENT FLOW, AND SERVICE REQUIREMENTS

These include: projections of student flow, of the educational characteristics of the population, and of the demand for educational services (teachers, classroom, facilities and teaching materials). The nature of these projections and forecasts, and the methodology employed in making them have already been described in our discussion of the basic educational system simulation model.

ESTIMATES OF AVAILABILITY OF STAFF AND FACILITIES

Estimates of the future availability of staff and facilities are required to complement projections of the need for these elements. These are in the form of simple forecasts of the number and type of teachers and other staff, classrooms and other fixed plant and teaching materials which will be available each year within the forecast period. In the case of teachers, these are based on trends in the enrollments of schools of education; in the case of buildings, on construction schedules and capital improvement budgets. Such forecasts are not meant to be fully comprehensive, detailing the complete list of possible items in the future resource inventory of the Department of Education. Rather, these are relatively long-range forecasts concerning the availability of the most important items, based on fairly simple extrapolations from the current situation, and simulating the effect of various policy alternatives. Short-range availability forecasts which project no more than a year or two, will be made in greater detail in conjunction with the routine scheduling and reporting functions of the information system. Either type of forecast can be made for various organizational levels of the Department.

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[9] One of the hoped-for benefits of the information/evaluation system will be an increase in our ability to relate the various kinds of schooling and other educational experiences to effectiveness, levels of skill in given occupations, and upon the transferability from one set of skill to another. This in turn will increase the responsiveness of educational planning and programs to manpower needs. The research base for this type of analysis will come from the use of the Educational Information System with data from other sources to follow up the

Cost projections forecast the dollar implications of meeting the projected demand for teachers, classrooms, etc. The procedures for arriving at cost estimates are discussed above, in the context of the system simulation model for forecasting student flows and service requirements.

PROJECTIONS OF DEPARTMENTAL REVENUE

Using data from the Puerto Rico Planning Board, the Bureau of the Budget, and from sources in the Federal Goverment, short, medium, and long-range projections are made of the funds available for education. Detailed short and medium range projection procedures are currently being developed, as part of the Commonwealth Four Year Development Plan, itself a central instrumentality in coordinated planning for all public agencies. These procedures yield working estimates of the yearly availability of funds to the Department of Education.[10]

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[10] Long range projections will depend on rough assumptions concerning the distribution of the governments total estimated revenue among competing programs, including education.

CHAPTER 3

Long Range and Short Term Goals of Educational Planning in Puerto Rico

PURPOSE OF THE COMPREHENSIVE PLANNING PROJECT

This was a federally sponsored pilot project including six states and Puerto Rico. Its purpose, at the federal level, was to stimulate planning by State Departments of Education. Each of the states in the project was, of course, unique in its history of educational planning, its planning needs, and its strategy for meeting these needs. In three ways Puerto Rico was perhaps more advanced in educational planning than most of the states, (1) in contrast to all states except Hawaii, the Commonwealth of Puerto Rico directly administers its school system, (2) Puerto Rico has more of a history of economic, social and physical planning than most states, and (3) Puerto Rico has a relatively large school age population and a smaller per capita tax base than any state.

For Puerto Rico, the Comprehensive Planning Project was an opportunity to take stock, to assess our planning status. The positive results of this effort are expressed above; the negative results are discussed below. Taken by itself, the preceding exposition of our planning for planning sounds impressive. In relative terms this impression is justified. There are not many states, nor many countries, that are as far along in educational planning as Puerto Rico. In terms of solving the problem, however, of actually increasing the efficiency of the educational system by means of systematic foresight, there is a long way to go. A powerful set of planning instruments is being developed. One of our problems is to complete them, which in some areas will take a long time. We will never, for example, satisfactorily measure the product of the educational system, in all of its significant aspects. But this is not all. The system, elaborate as it sounds, is not conceptually complete, as will soon be apparent.

No more is needed to expose our feet of clay than to attempt to set forth the objectives of our planning effort. So far we have expressed them in terms of "more bang for a buck." We want a planning system that will give us more education per dollar invested. But what kind of an educational "bang" do we want? Some possibilities have been suggested. A more productive labor force, better citizens, better parents, better personal lives. Who can define these things, even the first, unless dollar value is taken as the sole criterion? Obviously, the same labor force is not equally productive of cars, roads and houses, on the one hand, and of health services, education, art and music on the other. While no society can get along without some of all of these, the proportions can vary enormously and the kind of labor force desired will vary equally much. With this as a starter, it is clear that defining educational goals for citizenship, parenthood, and personal life is no snap.

So as not to get lost in this mire (and there are ways of reaching compromises on such issues) suppose an operational agreement on the educational product was reached. All that would be needed to know would be how many years of each course – English, Spanish, mathematics, social studies, science and vocational – would produce this product at minimum cost; at wat age and in what order these courses should be given; by what kinds of teachers; in what kind of space, using which educational materials and devices. In principle, data systems and analytical capacity have been established which will enable study of these matters; however, data is obtainable only on what exists in the system, and not even on all of that. It is, of course possible to develop a research program which would extend the range of these data. The agency is actually doing so; but encounters the fact that, after a century of ssytematic research on learning there is as much difference as they is agreement about basic theory, and the study of education is at least a century behind the study of learning, in the formulation of theory.

A MODEL OF THE PLANNING PROCESS

But enough has been said to make the point. If we had to wait for complete knowledge on even the most important aspects of educational goals and educational theory before we could plan for education, we might wait forever. Fortunately we do not. Educational planning will, among other things, gradually help us to perfect our knowledge of educational goals and educational theory. We do, however, need at least a provisional statement of our planning objective, of where we are going, a statement that will provide more guidance than merely to say we want a more efficient educational system. We can make such a provisional statement by combining what we know about our educational goals with what we know about planning. We can state educational planning goals partly in planning terms. While this does not solve the problem it does enable us to keep on working towards an apparent solution. This is all that humans can ask, or at least all that they ever get.

There are many ways of stating educational goals in planning terms. Almost every planner would have his favorite method, differing slightly from others. All such formulations have much in common, however, and the planning model we have developed, adapted from one previously published by Herbert Simon, is paralleled in most of its essentials by others.

In this conception the planning process consists of six basic components, ordered into three phases. These steps need not be taken in the order listed; the order is based upon logical necessity rather than time sequence.

INTELLIGENCE

This refers to the stage of planning in which the problem area is being studied and clarified. The notion of "intelligence" is borrowed from military parlance, in order to emphasize what is actually done: the transformation of raw information, gathered in terms of a set of essential information requirements, into processed information, so as to be useful for certain ends. The planner must examine existing information, and establish procedures for organizing and analyzing it, and for filling information gaps. On the basis of this research, an analysis of the situation is developed and goals for action are formulated. General policy guidelines are also suggested.

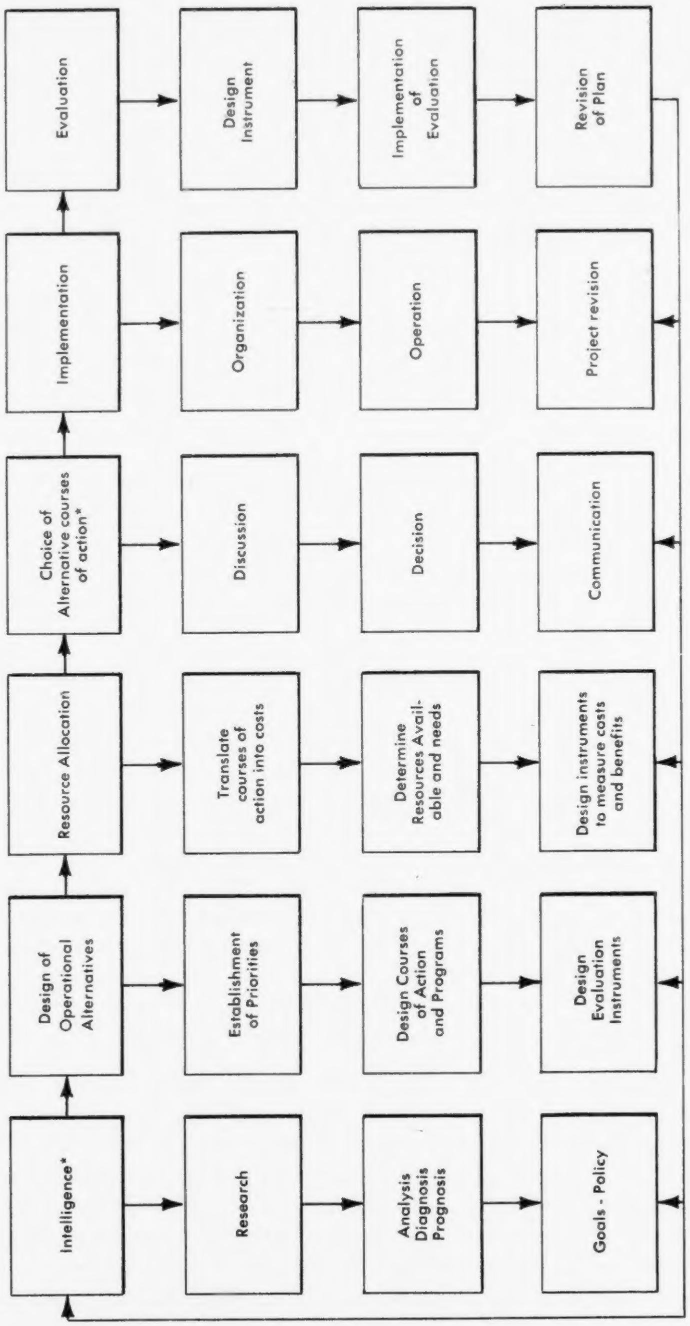
DESIGN OF OPERATIONAL ALTERNATIVES

Priorities between goals must be established. Courses of action, and specific programs which could solve the problem must then be designed. In addition, designs for evaluating the effects of these programs must be prepared.

RESOURCE ALLOCATION

The proposed courses of action must be translated into statements of the costs attendant upon each possible course. Available resources must be assessed, in the light of the needs implied by the program design. It is also important to design instruments which will measure the possible benefits and benefit/cost ratios of each alternative, in order to determine which of the possible alternatives yields the greatest benefits.

PLANNING MODEL PHASES


Intelligence*
Research
Analysis Diagnosis Prognosis
Goals - Policy
Design of Operational Alternatives
Establishment of Priorities
Design Courses of Action and Programs
Design Evaluation Instruments
Resource Allocation
Translate courses of action into costs
Determine Resources Available and needs
Design instruments to measure costs and benefits
Choice of Alternative courses of action*
Discussion
Decision
Communication
Implementation
Organization
Operation
Project revision
Evaluation
Design Instrument
Implementation of Evaluation
Revision of Plan

* These phases were adapted from Simon's three steps in the decision making process.

CHOICE

The alternative courses of action, and their implications as to resource allocation and acquisition and possible benefits, must then be discussed and a selection made among the alternatives.

IMPLEMENTATION

Although not properly a part of the planning process, implementation is here included in order to emphasize the need for close interaction between planners and other administrators.

EVALUATION

Evaluation should be a continuous process. Means and instruments needed to measure the effectiveness and efficiency of the educational tasks must be designed and employed. The findings of evaluation must be fed back into the revision of the plan and its implementation.

Like all such models, this one represents an ideal and, therefore a long-range objective. It is to be used as a set of direction finders and guide posts rather than as a blueprint for the construction of a planning system. The reasons for this view become apparent if one makes an attempt to use such a model as an actual blueprint.

Begin, for example, with intelligence and consider how to organize, budget, and staff to get it. No reflection is required to recall that what we know about any significant educational problem is as nothing in relation to our ignorance of it. Intelligence, in one sense, requires a research program that will last until the end of the world. But, even the immediate problem of assembling what is known about any signficant educational issue poses a formidable task. In time, organizations like ERIC will gradually make this problem more manageable. Most nations do not now have the resources required to assemble all relevant information on many problems of physical science and technology, areas where data gathering and synthesis are far better than the prospects in educational data are likely to be for a century.

Analysis of each of the boxes would lead to similar results, but let us take only one more to illustrate the point — resource allocation. Cost-benefit analysis is the obviously necessary basis for sound resource allocation, but the difficulties facing educational cost-benefit analysis are not only enormous — some of them are apparently insuperable. Consider the seemingly simple problem of comparing the benefits of humanities with those of science courses. Each of several sets of problems — the philosophical problems of comparing unlike things, the psychological problems of getting humanists and scientists to agree on definitions, the operational problems of constructing a common denominator – will yield solutions only partially, and gradually over a long period of time.

CURRICULUM PLANNING AND RESOURCE PLANNING: THE PROBLEM OF LINKAGES

This attitude toward planning did not develop (as might appear from the above) as a product of abstract analysis. It is rather a product of the experience gained in attempting to plan. This experience was brought to a head with the initiation of the Comprehensive Planning Project, which forced the agency to take an inventory of its planning activities. Two things became apparent. First, that the agency was engaged in the fairly long-term development of certain instrumentalities – the computer system, the cost-accounting system, the evaluation system – without which planning could not advance. Second, it appeared that some major planning efforts were going forward almost independently of each other. This appeared to be particularly true of curriculum planning on the one hand and resource planning on the other.

Curriculum planning is perhaps the oldest form of educational planning, in Puerto Rico and probably elsewhere. It is also the most basic kind of systematic educational planning. Curriculum planners, who are more directly concerned with educational objectives than other planners, decide what to teach, how to teach it, to whom, and with what resources. They really make the basic decisions on how educational resources, student time, teacher time, classroom space, books and other materials, are disposed or allocated. However, they do not do this explictly nor effectively. They do not do it effectively because they do not decide how many schools are built, how many teachers are hired, how many books and other materials are bought, or how many students are admitted and retained in school. In small districts, curriculum decisions and resource decisions may be made by the same people, but even then they are more often made independently of each other than not. In larger systems, like that of Puerto Rico, curriculum and resource planning decisions have probably been made in increasing independence of each other, even while emphasis on planning was intensifying. This condition is an inevitable result of specialization in planning and administration, unless explicit coordinating measures are adopted. We are not aware of any place in the world where such coordination has been systematically introduced. We are convinced, on the other hand, that curriculum and resource allocation decisions are made more independently in large, elaborately administered educational institutions than anywhere else. There is even a mystique which supports this separation. "True" educators, the ones who specialize in curriculum decisions, are among the strongest voices claiming that economic considerations prostitute the aims of education. However, since resources are always limited, the result of this argument is merely to absolve these educators of responsibility, and to make their decisions academic, in the invidious sense.

It is interesting and instructive that the preceding account of what Puerto Rico is doing in the development of a planning system makes no explicit reference to curriculum planning.[1] Not that curriculum planning has been static or even inactive. During the past four years a completely new high school curriculum has been pilot-tested and evaluated, with assistance from the Ford Foundation. A new elementary curriculum is currently being developed. Plans are afoot for a large-scale, island-wide, conference to produce an entirely new integrated curriculum. What is significant is that this curriculum planning has proceeded in almost complete independence of the work in resource planning. At top policy levels there is an acute awareness of resource limitations, and at this level, economy has been one of the objectives of all recent curriculum planning. Thus, for example, one of the features of the special high school curriculum enables bright and ambitious students to finish high school in three years. Given this interest and awareness at top policy levels, it is all the more remarkable that curriculum and resource planners have gone their separate ways, scarcely aware of each others' activities and the implications of these activities each upon the other.

One reason for the grand canyon between curriculum and resource planning is that curriculum and resource planners face in opposite directions. Curriculum planners are concerned with what ought to be taught, resource planners with what it takes to teach it. Stated in this way the complementarity of the two activities is strikingly obvious. Yet curriculum planners tend either to ignore or simply to complain about resource limitations, while resource planners tend to be unconcerned with what is taught.

Faced with this gap in the planning ranks, the Comprehensive Planning Project in Puerto Rico took as one of its short-term goals the reunion of curriculum and resource planning. The other short-term goal of the project is merely to close other similar gaps. The gap between curriculum and resource planners is not unique. It is, on the contrary, characteristic of the educational planning terrain, which is criss-crossed by similar faults. Planning for teachers and planning for school buildings seldom have more in common than the number of students to be taught, if that much. With few exceptions, student characteristics and teacher characteristics are dealt with in separate worlds. Joint consideration of employment prospects and educational offerings is still an exception, although Puerto Rico did this once, ten years ago, and is just now doing it again.

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[1] The discussion of the information/evaluation system has many implications for program and curriculum planning which, however, were not treated explicitly.

Our second short term goal, therefore, is the construction of bridges over all of these planning gaps. Not permanent bridges — this would be impossible — but temporary ones. In the single case of curriculum and resource planning, we are working on a permanent bridge. Once the distinction is made clear, it is easy to see why a permanent planning structure cannot be built all at once.

Planning requires techniques, or instruments. Even planning a simple trip requires a map or time-table, or perhaps both. Reasonably precise planning requires a good map and an accurate time-table, but a crude version of either one is better than nothing, provided the planners have a real joint interest in arriving at the same place at the same time. Crude maps and time-tables will get them into the same general area during the same season of the year, where they can find each other if they are really interested.

A simple example of an educational planning technique is a projection of student flows such as that described above. If based upon such a projection, the number of teachers trained and the number of classrooms built will be consistent, even if both are wrong. Without such a projection, if teacher trainers and classroom builders are interested, and if general account is taken of the movement of birth rates, retention rates and migration rates, the number of teachers trained and classrooms built can still be generally within the same ball park. Besides reducing waste still further, a good student-flow projection has another advantage; it can also compel a certain degree of cooperation from and between teacher trainers and classroom builders. If they ignore such a projection and are wrong, the finger will point directly at them.

Cooperation can be encouraged, if not compelled, by other means, namely by organizing communication in a way which requires people whose work converges to talk together about the object of their joint interests. Such organizational arrangements are referred to above as temporary planning instrumentalities. They do not indicate what each member of a specialized team must do in order to act consistently with the others. They do, however, provide for joint consideration of common problems. The other side of the coin is that such organizational bridges are relatively easy to build. They provide a means by which a comprehensive planning structure can be built within a short period of time. Obviously, it will be jerry-built, a temporary structure guaranteeing nothing but the opportunity for coordination. Planning instrumentalities which clearly indicate the path for coordination take time to build; perfect instruments require an infinity of time. The sensible course is, thus, to build both kinds of planning structures at once.

In the preceding chapters we have described Puerto Rico's educational problem and the planning instruments which had been and were being developed to cope with this problem at the time the Comprehensive Planning Project began. In the sections below we first describe our attempt to bridge the gap between curriculum and resource planning by means of three major planning instruments. These instruments were referred to in the preceding chapters, but not as solutions of this problem. Input-output, and cost-benefit analysis, described earlier, are fairly new to educational planning; the other, evaluation, is a relatively well established tool. It will be seen that these are mutually supporting instruments.

A procedure for linking resource planning with existing curriculum planning is discussed in Chapter 4. In the final chapter we describe the agency's attempts and intentions with respect to an improved organization for comprehensive planning; i.e., for the development of a temporary communication network which will have to serve for planning purposes while a host of new planning instruments are perfected, developed, and, in some cases, invented.

INPUT-OUTPUT ANALYSIS

In its simplest form this is merely a listing of the sources from which the components of a given product come, and of the destinations to which the product itself is consigned. Applied to education, one can ask: What are the inputs of the educational system and from where do they come? What are the outputs of the system and where do they go? The same question, of course, can be applied to any subsystem.

The main inputs of the school [illegible]ering students, teachers, buildings, materials, money, and demands from parents, employers, and legislatures for certain courses, standards, and time schedules. The main outputs of the school are graduates and drop-outs, with certain characteristics, the custody of students during certain hours, certification to employers, parents, and other schools of student characteristics, some extra-curricular programs of service and entertainment, and mostly in the case of higher institutions of learning, some research results and additions to the store of knowledge.

One of the important uses of input-output analysis is to insure consistency, or realism. It can determine whether, in fact, there are enough inputs to produce the planned outputs or, on the other hand, whether there are uses for all of the planned output. This use of input-output analysis could eliminate large-scale unemployment among graduates, as well as the failure of certain courses of study because qualified teachers, appropriate materials, or properly prepared students were not available.

Another use of input-output analysis is to guide research and, thus, to verify or disprove present assumptions. All curricula, for example, establish prerequisites for certain courses but very little is known about how students who have the prerequisites do in relation to those who do not have them. Neither do we know whether laboratories really make a difference in the learning of science, or teachers who are native speakers in the learning of languages. Neither can these things be found out unless other factors are rigorously controlled, i.e., unless all other signficant input and outputs are known.

For the above reason, input-output analysis is a pre-condition for cost-benefit calculations. In order to compare two competing claims for resources, we have to know all the significant requirements (inputs) of each claim, as well as all of its significant consequences (outputs). The cost of a vocational school, for example, is usually higher and its graduates usually learn less than those of an apparently otherwise comparable academic school. Thus, in cost-benefit terms, few vocational schools would be built. Common sense takes account, however, of the unstated assumptions, e.g., that the student input of the two schools is equal. This is usually not true. The students entering the vocational school usually have less educated and less privileged parents and require more educational input from society in order to be able to earn equally.

Input-output analysis is an excellent educational crystal ball, permitting planners to take into account predictable changes in the future labor market, in the kind of homes from which future students will come, in the growth of the future tax base, and in the popular demand for education of various types and levels. Complete input-output analyses would still leave curriculum and resource planners something to argue about, but they would narrow the debate and would provide for it a common store of relevant knowledge. Discussion of the technical problems of applying input-output analysis to education is deferred to the following sections on cost-benefit and evaluation. This is appropriate since the main difficulties do not lie in merely listing the inputs and outputs of educational processes. They lie in quantifying these inputs and outputs, i.e., in determining their costs and benefits in comparable terms.

COST-BENEFIT ANALYSIS

Broadly interpreted, rational decision making requires cost-benefit analysis. Decisions can, of course, be right without being rational. In this sense "rational" means based on a logic which the parties to the decision mutually accept. Among free human beings, the only logic that consistently qualifies is that benefits should exceed costs, and that the best alternative is the one in which benefits exceed costs by the greatest amount.

To say this is almost to condemn man to irrationality, since cost-benefit analysis is nearly as impossible as it is necessary. Not quite, since there are cases where the same article is offered at different prices, or where a product of apparent high quality has the same price tag as one of poor quality. These special cases do not fit curriculum development very well, and yet it is clear that signficant agreement on curriculum alternatives requires some sort of cost-benefit analysis. Following are some of the operations required for such analysis:

—units of input must be identified.

—costs per unit of input must be assessed.

—units of output must be identified.

—the benefits associated with these outputs must be estimated.

—procedures for relating inputs with outputs must be developed.

—some kind of common denominator for inputs and outputs must be found.

It is not necessary, for some purposes, to reduce outputs and inputs to the same denominator. Cost-benefit ratios can be compared where the numerators are both expressed in terms of dollars, for example, while the denominators are both expressed in students or class-hours. Whether such ratios provide an acceptable basis for decisions, however, depends on whether decision makers agree that the students or class-hours in question have an acertainable value.

Many kinds of educational costs are fairly easy to measure but a few of the more important kinds are not. Take the boredom of a student who is required to study a subject he currently dislikes. Einstein might have been deterred from the study of mathematics by such an experience, had he been required to attend school. Or take the frustration of a teacher required to teach uninterested or unprepared students. Confucius might have become a tailor, or Socrates a mason, with such alternatives.

Apart from such considerations, costs are relatively easy to measure, and there are wide areas in which such measures are very useful. Within a system, the relative costs in various regions and districts of various subjects and of various grades or levels are, obviously, of considerable interest. Even more interesting are such cost differences as those among different pedagogical alternatives, school organization, or methods of teaching.

Sometimes a knowledge of relative costs is decisive even without a measure of benefits. Ten years ago in Puerto Rico, for example, providing for one more vocational school student meant that four potential regular high school students would be left unprovided for. Now, resources are not quite so limited. Still it is not unimportant to us that we can teach adults to read for a hundred dollars each, while children each cost five hundred. Even more to the point, while we spend a hundred dollars a year on rural, primary grade children in double sessions, we spend many thousands on college post-graduates. One consequence is that many of these rural children drop out, so that over their educational life time we spend perhaps five hundred dollars. At the same time, on the most privileged ten percent of the population who graduate from the University of Puerto Rico we spend at least fifteen times as much – in public funds.

While disturbing to policy makers, however, such cost ratios are not decisive. Without comparing the associated benefits they cannot be. Our future leadership and technical cadre, for example, comes from the upper ten percent: teachers, professors, doctors, lawyers, businessmen, public administrators, political and labor leaders. Our criminals, welfare cases, dope addicts, and breeders of the next generation's drop-outs, come largely from the group on whom we spend the least. Many of the problems of assessing educational benefits and of interpreting cost-benefit ratios are implicit in these examples.

It is relatively easy, for example, to measure direct economic returns to education. Using the method developed by T. W. Schultz, with the aid of several of his students now associated with the Brookings Institution, we have estimated economic returns to education in Puerto Rico. They turn out to be substantial, of the same order of magnitude as in the United States and Mexico, and correspond well with the results of our studies of manpower supply and demand. What these studies show is how much additional life-time earning is associated with each additional year of schooling.

There are, however, several faults to find with this as a measure of educational benefit. First the educational system is a screening system, which does not very significantly alter the economic status of its students. The ones who stay longer in the system, and thus qualify for the better jobs and higher life time incomes, are the ones whose parents were also the best educated and the best off economically. This results, as previously noted, in the more privileged receiving far more than their share of even the public investment in education and thus in the perpetuation of privilege from one generation to another. What the economic returns to education would be if lifetime educational investment were apportioned with reasonable equality is another matter. If the number of well paid jobs continued to be limited and if the children of upper and middle class parents continued to get them, economic returns to education, as now calculated, would probably drop to very low levels.

There is, however, another side of the story. Economic returns to education, as now calculated, measure only the direct income of individuals and do not take account of returns to society. Positive returns to society may be reasonably well reflected in personal income. The income of medical doctors is high, for example, and the benefits of their services to society are also presumably high. There might be a distortion as between medical doctors in private practice and medical doctors engaged in research or employed by the government, but this would not affect comparisons between doctors and engineers or between doctors and janitors.

Negative returns are another matter. We mean by negative returns the social costs of not getting an education, the costs of crime, imprisonment, welfare, dope addiction and other personal malajustments to the social order. If these were included in the calculations, the calculated economic returns to education would increase greatly and might remain high even if educational investment were equally apportioned among individuals. These examples are discussed somewhat fully because they illustrate the difficult problems of definition and measurement involved in cost-benefit analysis. Actually only the easier problems have been discussed. Putting a value on poetry or upon the satisfaction of a good life, which could be measured in the same scale with the value of a scientific or engineering education is much more difficult. In terms of the existing philosophical system, it is in fact impossible.

Abandoning cost-benefit analysis because it cannot deal with all aspects of education is, however, like abandoning science because it cannot deal with all aspects of life. It is throwing out the baby with the bath. For without cost-benefit calculation of some kind, no educational decisions can be justified to anyone who does not share all of the relevant biases of the justifier. Education as a public enterprise requires common assumptions about the costs and benefits of education. As the public costs of education increase, the need to justify educational decisions will increase and cost-benefit analysis will have to be refined and extended regardless of doubts about its outer limits. One of the best ways to do this is to measure the direct outcomes of educational programs — which brings us to evaluation.

EVALUATION

In general usage, evaluation is the assessment of worth. In educational terms, this would mean the estimation of the benefits of education. Evaluation is not just a word, however; it is an organized activity in many educational systems. Actually, evaluation systems, including the evaluation program of the Puerto Rican Department of Education, do both more and less than measure educational benefits. What they do is to measure both selected educational outcomes, and also selected educational inputs. The outcomes most commonly measured are the skills and knowledge presumably taught in certain courses of instruction.

In Puerto Rico, these include reading skill and achievement in mathematics, science, and social studies. The principal input measurement in Puerto Rico is student aptitude, which to some people means native intelligence and to others is merely a measure of what the student has already learned. In either case, it measures the ease or difficulty with which further learning should occur. Given equal access to other inputs of the school system, and equal effort on the part of students, valid aptitude scores should predict future scores on achievement tests. More exactly, since aptitude tests are made up of sub-tests of verbal aptitude, mathematical aptitude, etc., scores on these sub-tests should predict future scores on specific achievement tests in areas such as reading, mathematics, or science.

The preceding discussion of input-output and cost benefit analysis indicates the principal needs to supplement current evaluation programs, if a comprehensive rational analysis of education is to be achieved.

Measurement of outcomes is not very meaningful without reference to costs. Neither are individual cost or benefit measures meaningful, except in the context of all relevant input and output measures.

Even as presently conducted, however, evaluation programs can make a great practical contribution to the needed bridge between curriculum and resource planning. The complete bridge, of course, requires input-output and cost-benefit analysis, but current evaluation procedures provide a vital link in the measurement of benefits. They do this because achievement testing programs, and, to a lesser degree, aptitude tests also parallel the curriculum in structure. Achievement tests follow the subject matter breakdown of the curriculum, and sub-tests of aptitude also correspond roughly to broad classifications of academic subject matter. More than this, however, achievement tests also follow the curriculum in its finer structure, sub-tests tending to correspond to teaching units, while individual items are frequently derived from explicitly stated curriculum objectives. All this, of course, is no accident. Achievement tests were planned, in most cases, to measure the achievement of curriculum objectives. The curriculum is, in fact, the recognized base for the construction of achievement tests.

One measure of benefits, in terms of the curriculum, is therefore ready at hand wherever an adequate set of achievement tests exists. Since, in principle, costs can also be distributed to curriculum units, one very significant set of cost-benefit comparisons can be made as soon as educational cost-accounting is brought to the level achievement testing has already reached in many educational systems. In addition, aptitude test results provide the single most important input measure not provided by cost accounting, a measure of the quality of the student input, an indirect measure of his social class and, therefore, of the educational investment made in him outside the school.

The whole evaluation system, as it now exists, fits so neatly into our requirements for the rational planning of education as to make it almost inconceivable that some of the architects of educational evaluation did not visualize the whole schema. It may, indeed, be only our lack of familiarity with the educational literature that leaves us in doubt. The one piece of evidence that does not fit such an hypothesis is the absence, everywhere, of any serious attempt at educational cost-accounting, without which the rest of the apparatus is relatively useless as a means for rational resource allocation. One possible explanation would be that the opposition to cost-accounting is more than the proponents of achievement testing could overcome. Another, more probable, explanation is that achievement testing was designed to rationalize the work of the student, the teacher and the counselor, rather than that of the school administrator or the legislator. However that may be, current evaluation procedures turn out to be equally useful as means of rationalizing educational decision-making at all levels.

Two caveats must be made, however. One is that evaluation systems are woefully incomplete, even in terms of their current functions. Few of them begin to cover the cognitive aims of education, while none of them make more than a stab at the non-cognitive objectives. Even more significantly, however, few evaluation systems work the way they were designed to work. Originally, sub-tests may have been in correspondence with curriculum units, but how many tests are kept in correspondence with curriculum changes? Sub-test and item analysis is fairly standard procedure, but how often are these analyses used as the basis of curriculum evaluation and change? How often, indeed, are sub-test and item analysis results used for student guidance, or for the evaluation of teaching, or for any of their original purposes. One reason they are not used more may be the recognition that the system is incomplete. Without relatively complete analysis of inputs and outputs, reliance on test results is very risky. From legislator to student, rational educational decisions require a conceptually complete system of information. The blanks need not all be filled in, and a reasonable degree of measurement error is not fatal, but data on benefits without comparative data on costs, or vice-versa, are not very helpful, and neither is one measure of inputs or outputs without other equally important measures to establish a context. Even those elements which defy precise comparison with others should be in the picture. People make comparisons every day which computers cannot make. They prefer a flower to a chocolate bar or a baseball game to a concert, and they can usually say why in terms which induce understanding if not agreement.

CHAPTER 4

A Procedure for Linking Resource Planning with Existing Curriculum Planning

From the description of the Information and Evaluation System in Chapter 2 of this report, the impression could easily be gained that we have only to wait for the results of an exhaustive analysis of our present curriculum and teaching practices. While the potential is clearly there, and while such an analysis has a clear priority over alternative uses of the system, it might still take a long time for this objective to be fully realized – much too long to merely sit and wait. The procedure outlined in this chapter has, as one of its purposes, the defintion of an intermediate product which could be obtained much sooner. Another, perhaps even greater, time gain could result, however, from using the procedure outlined in this chapter as an immediate plan of work involving all of the major planning units of the Department. Completion of the Information and Evaluation System also, of course, involves each of these planning units, but in a different way; it involves them in system building, not in substantive educational planning. Significant benefits might result from pursuing both goals at once. The Information-Evaluation System is, after all, merely a planning tool.

At present, there are three principal instructional programs in the Department of Education: the Regular Program of Instruction – which is by far the largest, dealing with the regular day schools; the Prorgam of Vocational Education; and the Program of Adult Education. This section of the report selects one of these – the Regular Program of Instruction – as an example of an attempt to link existing resource planning with the existing mode of designing and organizing the curriculum.

LOGISTICAL ANALYSIS

Basic Demographic Studies

Planning must begin with an analysis of demographic trends, and the preparation of population projections. The Planning Board has the primary responsibility for formulating these projections.

ANALYSIS OF SCHOOL POPULATION

A model for the projection of school population has been described in the first section of this report.

PROJECTIONS OF FUTURE RESOURCE REQUIREMENTS

Physical Facilities. Estimates of the need for facilities are generated by the previously described model. This analysis should be accompanied by an inventory of the present physical facilities, indicating the age and degree of deterioration of each. The completed analysis would indicate the need for physical facilities, stated in four categories:

–the needs emerging from the expansion of school enrollment, due to the growth of the client population and the social demand for education.

–needs for the replacement of inadequate, dilapidated and obsolete structures.

–needs resulting from the elimination of double and interlocking sessions.

–needs resulting from internal, largely rural to urban, migration.

Funds needed for reconstruction, maintenance and improvement of present facilities should also be calculated.

Demand for and Supply of Teachers and Other Personnel. Enrollment projections provide the basis for calculations to determine needs for teachers and other personnel. The next step is to determine the inventory of teachers in service, and the potential supply in training. Important variables to examine are the age structure of the teaching force, the number of vacancies, the number of teachers without required preparation, losses due to death, leaves, resignation, and promotion, and the supply of graduates from teacher training programs. Demands for personnel other than classroom teachers can be calculated on the basis of indices specifying the number of each category needed to support 100 teachers.

As in the case of physical facilities, the need for teachers can be stated in four categories as follows:

–need for teachers because of the expansion of school enrollment, itself a product of the increase in school age population and social demand.

–need for teachers to fill vacancies caused by turnover.

—need for teachers because of the elimination of double sessions.

—need for substitute and specialized teachers.
teachers.

Requirements for Equipment, Books and Other Educational Materials. Here also, the enrollment projections are the basis for the estimates. These must be coordinated, in greater detail than in the past, with teacher and facilities planning.

Requirements for Auxiliary Services. The system provides a number of auxiliary services to poor students, in order to facilitate their participation in school.[1] As the objective conditions of the poor change, the design of some of these programs will have to be modified, and new programs developed. To calculate these needs for future years the planner should study both the trends in the use of these services and the future characteristics of the client population.

CURRICULUM ANALYSIS

The aspect of curriculum planning with major implications for resource allocation is the time budget of the subject matter taught in the schools. Note that, in the assignment of time to each subject the planner is not only allocating resources, but is, in effect, establishing priorities among curriculum components. Systematic study of this aspect of the instructional program provides a tool for coordinating research, logistical planning, curriculum planning and program budgeting.

EXAMPLES OF EXISTING SCHEDULES AND THEIR IMPLICATIONS

The elementary school curriculum in Puerto Rico is divided into five subject areas. The time allotted to each subject varies according to different types of school organization. The official time table, according to circular letter number 49 of June 23, 1959, is portrayed in Table X.

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[1] These programs currently include: School Lunch, Student Aid and Scholarships, Transportation, Shoes, and Guidance.

TABLE X

ELEMENTARY SCHOOL DISTRIBUTION OF TIME BY SUBJECT AND BY TYPE OF SESSION

Subject	DOUBLE SESSIONS		INTERLOCKING	SINGLE
	I to II Grade	..III* IV Grade	IV to VI Grade	III to VI Grade
Spanish	50′	40′	50′	60′
Soc. Stud.	25′	30′*	50′	60′
English	30′	40′	50′	60′
Arith.	25′	30*	50′	60′
Science	25′	30′	50′	60′
Activities	15′	20′**	40′	40′
Recess	10′	10′	10′	20′
TOTAL	180′	180′	300′	360′

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* Four days per week.
** One day per week.

To sample the actual situation in the schools we studied District C of Río Piedras, and found a variety of time allotments in various elementary schools. An example of the results of the study are shown in Table XI.

TABLE XI

SCHEDULED DISTRIBUTION OF TIME BY SUBJECT ELEMENTARY SCHOOLS OF RIO PIEDRAS "C" DISTRICT

SUBJECT	SCHOOLS						
	#1	#2	#3	#4	#5	#6	#7
Spanish	90′	80′	90′	90′	100′	90′	60′
English	60′	60′	50′	60′	60′	50′	60′
Mathem.	50′	60′	60′	60′	60*	60′	60′
Science	50′	60′	40′	40′	30′	40′	60′
Social Stud.	50′	60′	40′	50′	40′	40′	60′
Activities	40′	30′	60′	40′	60′**	40′	40′
Recess	20′	20′	20′	20′	20′	20′	20′

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* Mathematics is offered 4 days a week; ** Activities offered 1 day a week.

The variation found between schools, in the time allotted to each subject, raises an important point of planning procedure. Pedagogical emphasis is on flexibility. Ideally, we want a different distribution of time for every child. But, if this objective is achieved, how can we plan? Or is planning incompatible with a flexible use of time?

Planning and curriculum flexibility can be reconciled by means of new kinds of data systems. In order to plan we need to know the purposes for which specific resources are used and how much of each resource is used for each purpose. This can be inferred from official schedules, but experience in industry shows that this is an unsatisfactory approach, even where operations are highly routinized. Facts always differ from theory and effective planning should be based on facts. This means that we need systems of observing and recording what actually happens in the schools, on a sampling basis, of course. Until we have reliable observations, schedules will provide a first approximation for planning. The planning procedure is no different, however, it will merely work better with better data.

Our study of curriculum included the intermediate and high school levels but, while these are differently organized than the elementary schools, the differences are not significant for the present problem.

THE ENGLISH CURRICULUM AS AN EXAMPLE OF ANALYSIS

We proceed, therefore, to an analysis by subject, using English as an example of a major curriculum subdivision. The scheduled distribution of time, in this subject-matter area, is indicated in Table XII.

TABLE XII

TIME SCHEDULED DAILY FOR ENGLISH, BY GRADE AND TYPE OF PROGRAM AND SESSION

ELEMENTARY SCHOOL

Grades	Single	Interlocking	Double	Double
1 to 6	6 hrs	5 hrs	4 hrs	3 hrs
minutes	60′	50′-60	60′	40′

JUNIOR HIGH SCHOOL

Grade	Single Sessions		Interlocking	
	Urban	Rural	Urban	Rural
7th, 8th, 9th with Vocational Subjects (minutes)	80′	90′	75′	75′
7th, 8th, 9th without Vocational Subjects (minutes)	100′	100′	100′	100′

SENIOR HIGH SCHOOL

Grade	Single Sessions		Interlocking	
	Urban	Rural	Urban	Rural
10th, 11th, 12th Academic (minutes)	50′	50′	50′	50′
10th, 11th, 12th Vocational (minutes)		n.a.	n.a.	n.a.

CURRICULUM ORGANIZATION AND IMPLICATIONS FOR RESOURCE REQUIREMENTS

The second step in curriculum analysis by subject involves the break down of the general objectives of the subject. These specific objectives should be expressed in terms of the skills, attitudes, and knowledges the student is going to learn or develop.

The general objectives of the English curriculum are to:

—develop in pupils the ability to understand, speak, read, and write English, and

—develop in pupils the habits of using English as a vehicle of communication.

These objectives are further subdivided by grade levels. The objectives for the Primary level – grades one, two, and three – are to:

—arouse in the pupils a desire to learn English,

—develop in the pupils the ability to understand English, using the items of structure and vocabulary listed in the courses of study for these grades,

—develop in the pupils the ability to produce English orally using the items of structure and vocabulary listed in the courses of study for these grades,

—help each child express himself in English, about everyday experiences, in accordance with his own rate of language growth,

—develop readiness for reading, by providing oral practice on structures and vocabulary to be read, and

—initiate the pupils in the development of reading and writing skills

The next step in the analysis involves the allocation of time to each of the objectives. In the 1st and 2nd grades, the time is devoted to oral English. In the third grade, reading and writing is added to oral practice. There is no required division of time between reading and the teaching of grammar but the following division of time is recommended by the curriculum division:

	Activity	*Time*	*Materials*
1.	Language*	2/5	American English Series
2.	Reading	2/5	Books for each grade
3.	Enrichment	1/5	American folk songs, dramatization, choral recitation, clubs

* (listening, speaking, writing)

When the analysis of the allocation of time between and within subjects has been completed, the next step is the assignment of books and other educational materials. The English curriculum guides provide this information, recommending books and audiovisual materials for teachers and for students.

Each course of study, as presently outlined by the curriculum division, provides the following information, which logistical planners can use in assessing resource requirements:

—time for each subject.

—time for each unit.

—equipment, books and materials, required or recommended.

In organizing the curriculum by grade, by subject, and by specific unit, and in making specific assignments of time, the curriculum planner establishes the basis for estimating resource requirements.

CURRICULUM COSTS

The next step is to determine the costs of teaching an individual subject. This involves costing three elements: teacher time, facilities, and other costs.

Teacher time. The time budgets for the various subjects are translated into teacher time. The two major variables are the school organization — single, double or inter-locking sessions and the pupil/teacher ratio for each subject and by individual classes.

The following is an example of teacher costs per students in a rural elementary school:

ORGANIZATION: Double sessions, three hours of class per student, six hours per day for teachers and physical facilities.
ENGLISH CLASS: 40 minutes
NUMBER OF STUDENTS: 35
TEACHER'S SALARY: \$315.00 per month
Teacher costs for 40 minutes of English instruction for one day are:

$$\frac{\$315.00 \text{ (monthly salary)}}{120 \quad \text{(20 days per month x 6 hours per day)}} = \$2.63/\text{hour}$$

40 minutes of instruction = 2/3 of \$2.63 = 1.75

The per-student teacher costs, obtained by dividing 1.75 by 35, come to 5 cents per pupil per day for instruction in English.

Besides the costs of teacher salaries, there are costs associated with salaries of other personnel and with other services provided by the educational system to the same students. "Other personnel" include the school director, the district superintendent, the guidance counselor, maintenance and lunch program personnel, office personnel, supervisors curriculum technicians, and administrators. Their salaries can be distributed over the students they serve and allocated to subjects by means of the program.

Physical Facilities. The costs of classrooms vary. Suppose the rural classroom we are talking about was constructed by the municipal government at a cost of $6,149.00, and that we assume it is going to last for 50 years. Then the costs of the education of a child, associated with physical facilities, can be obtained as follows:

$$\frac{\$6{,}149 \text{ (initial building cost)}}{50 \text{ years (estimated building life)}} = \$122.98 \text{ per year}$$

This is the annual share of the initial cost of the building.

Adding 10% maintenance per year:

$$\$122.98 + 12.30 = 135.28 \text{ (annual cost)}$$

$$\frac{\$135.28 \text{(annual cost)}}{200 \text{ (school days)}} = .68 \text{ (cost per day)}$$

$$\frac{\$.68 \text{ (cost per day)}}{35 \text{ (number of students)}} = .02 \text{ (cost per student per day)}$$

Other Costs. Costs of materials, including books and other instructional aids such as paper, erasers, pencils, and chalk, can be estimated using aggregate annual consumption data. Costs per student can be obtained by dividing total costs by average daily attendance. The costs of program-related materials can be allocated to cost/subject by means of the subject matter program, as in the case of salaries of auxiliary personnel.

Other costs which may be similarly treated include:

—costs associated with central, regional, and local administration and supervision.

—costs associated with curriculum planning by teachers.

—costs associated with services for students.

–lunch programs.

–economic aid for students (shoe programs, transportation, scholarships).

FISCAL ANALYSIS

The analysis of the fiscal base for public revenues, in order to project funds available for future public education expenditures, has been previously discussed.

MEASUREMENT OF EDUCATIONAL OUTCOMES

Curriculum analysis by subject and grade level not only provides a framework for allocating costs; the same breakdown into subject-matter teaching units is also the basis for subdividing achievement tests and for constructing different kinds of achievement test items.

The following is an example list of items comprising a subtest of a standard achievement test in English at the IV, V, and VI grade level:

Find the word that completes the sentence and mark the corresponding letter.

1. The pupil is absent ____________ .
   A) today
   B) yesterday
   C) tomorrow
   D) before
   E) never

2. ____________ is a piece of paper.
   A) His
   B) It is
   C) He
   D) Its
   E) It

3. These are ____________ friends.
   A) hers
   B) yours
   C) mine
   D) my
   E) ours

4. Mother is ____________ home.
   A) on
   B) in

C) at
D) over
E) under

5. My sister needs ______________ umbrella.
A) an
B) a
C) on
D) at
E) and

These items are all designed to measure how well students have learned to use the various parts of speech. The time allocated to this objective is given in the curriculum plan. The associated costs can be estimated by means of the procedures just outlined. These costs can be directly compared with the amount of learning which has occurred, as measured by results on the preceding set of items. The distribution of learning among students may be as important as the average amount of learning. In some subjects, high school mathematics, for example, all of the learning may be concentrated among a minority of the students.

DATA REQUIREMENTS FOR INTEGRATED CURRICULUM AND LOGISTICAL PLANNING

The preceding discussion has sketched methodologies for linking existing logistical planning procedures with existing curriculum and program planning. This exposition has also outlined a basis for a limited benefit/cost analysis. These methodologies, although tentative and provisional, require a considerable amount of information to support them. Collection, organization, and analysis of the necessary data can be facilitated by use of the existing capacity of the computer-based information system, but its availability does not depend upon completion of this system. The basic requirements include information on:

–unit costs

–fiscal trends

–projections of cost of living indices and price trends

–staff characteristics and utilization

–utilization of facilites

–expected levels of service, and the organization of programs and curricula

—pupil characteristics

—data on operating classroom

—program evaluation; performance and effectiveness effectiveness

UNIT COST DATA

Data on unit costs is to be provided by the financial information system, using a sample of operating schools, and districts within each region as well as all central and regional operations. Unit cost information can be indexed to other data through the use of the established cost centers and a code which identifies classrooms and operating schools. These inputs should be classified as follow:

—personnel salaries, classified according to position (classroom teachers, principals, superintendents and assistant superintendents, regional and central supervisors, and others.

—training costs for classroom teachers.

—building acquisition unit costs (land, design, construction, further classified by each type of unit (classroom, laboratory, lunchroom, etc.).

—fixed equipment costs (classroom, laboratory, lunchroom, office, etc.).

—fixed equipment costs (classroom, laboratory, office, and other uses).

—movable instructional equipment

—other movable equipment (vehicles, etc.)

—consumable supplies (classroom, laboratory, office and etc.).

—upkeep, repair, maintenance and utility costs (buildings and similar facilities, fixed equipment, vehicles, etc.).

—scholarships and grants in aid

—source of funding for each unit of input

Information on these factors should be further classified by:

—programs and sub-programs, subjects, and projects (including district, regional and central administrative functions).

—grade and level (pre-primary, primary, intermediate, secondary).

–organizational level (operating classrooms, operating schools, school districts, educational regions).

–type of session, where applicable (regular single session, double sessions – further classified as to 4 and 3 hour sessions; interlocking sessions)

–time allocated to program and curriculum units.

FISCAL TRENDS

Fiscal projections, and estimates of probable trends in the allocation of Commonwealth, Federal, and other funds are required. Information on restrictions placed on the use of these funds should be taken into account.

COSTS OF LIVING AND PRICE TRENDS

These trends may be calculated as extrapolations from data on consumer costs of living, provided for working class families by the Labor Department (with appropriate adjustments for living costs to salaried professionals), and the indices of construction material costs maintained by the Planning Board. Information on other labor costs, especially that of construction personnel, can also be obtained from Department of Labor sources. Data on land values, available at present in part from the Planning Board, will also be used.

The need for teachers and other staff is projected as a derivative of the projections of student flow (see chapter 2). The cost of teachers and other staff must take account of salary increases, adjusted to the cost of living index derived from the Labor Department, and predictable increases in State contributions to fringe benefits. The present policy concerning salary differentials, according to the degree of preparation of the teacher, has been carefully adjusted to sttimulate staff members towards the maximum of academic training, and can be considered to remain in force for the forseeable uture.

CHARACTERISTICS AND UTILIZATION OF STAFF

These should be reported as follow:

Classroom Teachers

–training (amount of preparation, certification, time, etc.).

–training source (pre-service teacher training programs, in service teacher training programs).

–classroom schedules and pupil load, cross-indexed to classroom group, program, sub-program, subject.

–detailed time-and-motion data on allocation of time among specific functions (administrative, didactic, child-care, etc.)[2]

–salary level

Other Staff

–the parameters for other staff positions (school, district, regional administrators, technicians, supervisors, etc.) are similar to those for classroom teachers.

FACILITIES UTILIZATION

Facility cost factors would be based on construction costs, using Planning Board estimates and cost analysis from Department of Education sources.

It is necessary to know which facilities were utilized, by whom (which staff members, which students and classroom groups), and for what purpose (i.e., in which of the program classifications). Use-ratios for each major facility type can be calculated on the basis of these data.

PROGRAM ALLOCATIONS

Information on program content and activities is currently classified according to major programs, sub-programs, activities, and subjects. Separate classifications exist for Title I projects and for Title III programs and projects. Data is required on:

–program organization

–service ratios and levels

–the participation of staff and students in each program unit.

This latter requirement becomes critical when there is simultaneous ilnvolvement in, for example, several Title I programs, ordinary subject-matter offerings, and a Title III activity.

–information on projected or expected additions or modifications in program content and levels of service.

PUPIL CHARACTERISTICS AND ASSIGNMENT

Pupil Characteristics and assignment information requirements include:

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[2] As indicated above, such data will improve the results of the study. They are not required, however for a useful, tentative analysis.

–performance on basic aptitude tests.

–data on home environment (income of the household, occupation, industry, educational level of parents and other out-of-school household members, number, order and identification of siblings. Procedures for assessing and measuring the effect of different types of household organization and behavior upon student effectiveness in the schools must also be developed).[3]

–pupil assignment (program, sub-program, subject, or project, teacher, enrollment in operating classroom and operating school district and region, information on facilities distribution, use of facilities by each type of pupil.

–age, sex, residence, migration history, experience in school systems other than the Puerto Rican public schools.

–pre-primary experience (Head Start, Kindergarten, Montessori nurseries, other)

–attendance records

–distribution of student time by subject, program, etc.

–grades and other reward patterns consistently assigned by classroom teachers.

DATA ON OPERATING CLASSROOM ORGANIZATION

The concept of the "operating classroom" would be the major instrumentality for inter-linking data on unit costs, student characteristics, enrollment and attendance, performance on aptitude, achievement and other instruments, staff and facility usage, program allocation, and other factors. Such groups would constitute the basic accounting module and can be aggregated according to their location in space, and according to their organizational focus within operating schools, districts, or regions by combining facility, staff, and service factors at each organizational level.

PROGRAM EVALUATION: PERFORMANCE AND EFFECTIVENESS DATA

Results of standarized achievement tests and other attainment measures would be used to assess pupil learning, staff performance, and program effectiveness. For best results, these data should be available on the following basis:

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[3] Not all of these data are currently available nor are they all necessary for a preliminary analysis.

—by operating classroom, classified by subject, project, program, and individual pupil.

—per teacher.

—for each curriculum and program element, grade and level.

—for operating schools, districts, regions.

—by urban, rural, metropolitan area, and other geographic areas, delimited according to basic socio-economic variables.

—by household characteristics composition, inome, occupation, parental education, composite index of socio-economic status)

—among sibling sets, and by sibling order.

—results of attitudinal measures, classified in much the same way as the achievement measure.

—results of the evaluations of pilot, experimental, and demonstration projects.

—other basic social and educational indices:

 —adult literacy.

 —the educational stock of the population (out of school) categorized according to age, sex, labor-force participation and employment status, industry, occupation, residence, migration history, income, and income sources.

 —flow and trend data for these parameters.

 —rates of growth of the work force, and rates of change in productivity indices, by industry, occupational groups, and educational level.

 —household expenditure patterns for educational services, books, etc.

CHAPTER 5

Organizing for Planning

GENERAL

The Auxiliary Secretariat for Planning and Development, established in 1965, is described in Chapter 2 of this report. Organization for planning has continued to evolve since the establishment of the Secretariat. The Computer Center is the major new unit within the Secretariat. New planning functions have developed as part of the "Guide District" program established under Title III of Public law 89-10; as part of the Office of the Federal Programs Coordinator, and elsewhere in the Department. The general impact of the Comprehensive Planning Project has already been described. Apart from this, a variety of other new initiatives bearing on the Department's organization for planning have developed during the past year. So many, in fact, that an attempt to paint a static picture of the current organization for planning would be highly misleading. It would even be misleading to speak of a proposed organization for planning as if there were one official proposal. The developments described below are all proceeding with official approval, but with the recognition also that educational planning in Puerto Rico, as elsewhere, is a highly dynamic area in which organizational plans are far from frozen.

Some diagnosis of the need for additional organization for planning has already been made. The need to link curriculum and resource planning has been described and some of the gaps separating other sub-divisions of educational planning have been pointed out. In the preceding discussion, organization for planning was characterized as a substitute for the development of planning instruments. This statement must now be qualified in two ways. First, planning techniques do not make organization for planning unnecessary. Second, organization can not solve, even temporarily, all of the problems of coordinating related kinds of planning.

Good planning techniques do, in part, substitute for organization. A student-flow projection, technically sound enough to obtain general acceptance will, for example, permit planning for teachers and planning for school buildings to occur as relatively independent actions, insofar as sheer numbers are concerned. Such planning will not be totally independent, however. Coordination, which implies some kind of organization tie, remains indispensable. Good planning instruments thus provide necessary flexibility in organizing for planning. It is equally evident that organization cannot solve all planning problems. To unite curriculum and resource planning organizationally would solve one problem only by creating another and, probably, a greater one. It would separate the direct supervision of the schools from the planning of their program.

The recognitions that organization is necessary, but not sufficient, for planning is the beginning of wisdom about organization for planning. Within the context of this generalization, and of the preceding discussion, the rest of this chapter describes organizational changes currently in process which are intended to improve and extend the scope of educational planning in Puerto Rico, and to provide the framework within which the continued development of planning instruments will proceed.

ORGANIZATIONAL PLANNING LINKS WITH OTHER AGENCIES

Four Year Plan

A new four year planning program was initiated last year by the Commonwealth Planning Board. The new Four Year Plan replaces a previous Six Year Plan, which was primarily a capital budget forecast. The new plan is intended to be much more than that. It is supposed to (1) forecast operating budgets as well as capital budgets, and (2) coordinate the programs of all government agencies by providing them with a common set of assumptions. These assumptions include (1) the economic and demographic projections of the Planning Board and (2) a comprehensive legislative program of the governing party of the Commonwealth called "The Purpose of Puerto Rico." The program establishes standards for health, education, welfare, and other aspects of social life and at least tentatively sets government agency targets related to these standards. These targets must be kept somewhat flexible, partly in view of uncertainties about government income and partly to allow for unplanned shifts, in migration patterns for example, or in the outcomes of government programs.

ESEA Title III Programs

Title III programs have forged new links between the Department and the Universities and Colleges of Puerto Rico. Several formal proposals exist for even closer organizational ties in programs of research, curriculum revision, and teacher training. Both service contracts and joint appointments link the Department especially closely with the Graduate Program in Planning of the University of Puerto Rico.

ORGANIZATION FOR PLANNING AT THE CENTRAL LEVEL OF THE DEPARTMENT

The most important changes contemplated, partly in consequence of the Comprehensive Planning Project and partly at teh joint initiative of the Secretary of Education and the Assistant Secretary for Planning, are the establishment of (1) a Policy Planning Committee of the Department, and (2) a Planning Unit, within the Secretariat for Planning, which would serve as a technical staff to this Policy Planning Committee. The Committee would include the Secretary, heads of the major educational programs, and others as yet unspecified. The planning unit, in addition to helping the Committee formulate the objectives and target of the education system, would continue work on models of the system and on related planning methodology —especially on the kinds of planning instruments described herein which might eventually constitute an integrated planning system.

One of the contemplated tasks of the planning unit during the next two years is the development of a "single package" proposal for federal funds. This will, necessarily, involve close collaboration with the work of developing the state plan required for future Title III applications. Development of an integrated federal package will also require joint work with persons working on the long-range and four-year plans of the Department.

How the Four Year Plan will be related organizationally with the work of the contemplated Planning Unit is not yet decided. Long-range planning and the four-year plan could be organizationally combined. They could also be kept separate, with the Planning Unit providing the targets for the four-year plan, while the detailed programming for achievement of these targets could be tied to the proposed program budgeting activities of the budget unit.

Serious consideration is being given to the organizational separation of budget planning and budget administration. Administration of the budget would return to the jurisdiction of the Assistant Secretary for Administration, whose responsibility it was before the Planning Secretariat was formed. Budget planning would remain as part of the Planning Secretariat. It is expected that the planning of the budget will increasingly develop into program budgeting.[1]

New additions to the Planning Secretariat are already engaged in linking, guiding, and supporting the planning activities of the Central Office to those of field offices and schools. A fuller description of this activity is contained in the following section.

ORGANIZATION FOR PLANNING IN THE REGIONS, DISTRICTS AND SCHOOLS

Until very recently, no specialized planning personnel had ever been employed outside the Central Office of the Department of Educaiton of Puerto Rico, although obviously, planning has been done by teachers, school principals, district superintendents, and (since the regions were organized a few years ago) regional administrators and regional staff. During the past eight years, teachers, principals, superintendents, and more recently, regional administrators and supervisors have been increasingly drawn into the planning activities of the Department. This has been done by means of *ad hoc* committees, training seminars, special assignments, and in a variety of other ways. Only recently, at the initiative of an Assistant Secretary for Planning, who also helps administer the Graduate Program in Planning of the University of Puerto Rico, have steps been taken to incorporate specialized planning personnel into the field structure of the Department and thus to forge a new kind of organizational linkage between planners at the various levels of the public school system. Some preliminary steps in this direction were taken several years ago when it become evident that expansion and modernization of the evaluation and statistical reporting system would require at least part-time specialized personnel in the regional and district offices. Only in the past year, however, have full time planners been assigned, on a pilot basis, to regional and district planning.

An initial week-long workshop on planning at the district and participants were district superintendents who also played the predominant role in all of the sessions. Enthusiasm for decentralization of planning and for participation in central planning was expressed not merely in words but in well-thought-and proposals and in a number of impressive pieces of local research into educational planning problems.

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[1] This change was implemented during the summer of 1968.

Planning linkages with schools. There is little doubt that the staffing of regional and district offices with trained planning personnel will now proceed as rapidly as budget and personnel limitations permit. A permanent field coordinating staff will be established in the Secretariat for planning. Some of the district superintendents who attended the June workshop returned to their districts determined to begin working with their own school principals, and to have these principals, in turn, begin to organize planning activities with the teachers under their supervision. The organization of a planning network that extends from the central office to the individual classroom is, in principle, agreed upon and will be a reality within a few years.

In even less time, a major instrument which can unify planning efforts at all levels will have been brought to a practical level of development. As soon as the information system described above is complete, we will be able to prepare a limited, but meaningful, cost-benefit analysis by class, by school, by district, by region, by program and by major subject. This will provide teachers, principals, superintendents, regional administrators and program heads with data on the comparative learning gains of their students. These data will be adjusted for student aptitude and home environment, teacher preparation and pupil load, capital costs per student, materials and equipment costs per student, and special program benefits and costs per student. Projections of future student population and factor availabilities will be provided, not much later, in similar detail. With these data every responsible educator in the system, from the Secretary down to each teacher, will be able to plan, jointly, with a uniform statement of the educational problem available to each in terms of his own responsibility.

Whether it would have been wise to launch a program, seeking maximum involvement in planning of educators at all levels of the system, without the prospect of these kinds of planning instruments could, perhaps, have been questioned. Fortunately it is an "academic" question. Indeed it is likely that, except for the enthusiasm generated by rapid progress in the development of planning instruments, organization for planning would not have burgeoned as it has.

CONTRIBUTION OF THE COMPREHENSIVE PLANNING PROJECT

The Comprehensive Planning Project cannot, of course, take credit for all this progress. Educational planning began in Puerto

Rico long before the Comprehensive Planning Project was a gleam in any one's eye. The present rash of development in educational planning in Puerto Rico has had many stimuli besides the Comprehensive Planning Project. Nevertheless, the Comprehensive Planning Project has made a substantial contribution, and the federal initiative, of which the Comprehensive Planning Project is merely one example, has been important to a degree which is hard to overestimate.

Federal funds have probably been even more important than federal ideas and stimuli. Without the flexibility permitted by Title V in staffing for planning and in modernizing accounting, without Title I evaluation funds to help finance the modernization of our information system and research program, without Title III funds for program innovation, it is hard to see how the agency could have achieved even a fraction of what has been accomplished.

With that debt acknowledged, there remains a very great obligation to the personnel of the United States Office of Education, assembled in part under previous administrations but also in very considerable part by John Gardner, Francis Keppel and Harold Howe II. To be urged to do things which many frustrated educators have always longed to do, to be supported in these activities, to receive financial assistance making it possible to carry them on and to be rewarded for doing them, is the kind of dream which only a minority of baffled bureaucrats ever dream, with even fewer having such a dream come true.

Thus, if Puerto Rico can, as in truth it must, take the basic credit for its achievement in educational planning for itself, it must nevertheless express an unbounded appreciation to the United States Office of Education, and particularly to the management of Title V of the Elementary and Secondary Act, for its role in accelerating the progress toward improved planning in education.

Appendix I

THE TEN-YEAR STATEMENT OF EDUCATIONAL NEEDS

(Office of Planning and Educational Development, 1965)

As the headings of the individual tables indicate, the elementary and secondary schools are treated separately; quantitative and qualitative targets are distinguished; and major elements of quantity and quality of instruction are identified.

These statements are not plans, since they say little about means. They do provide one set of planning goals. These particular goals are called minimum needs because they incorporate publicly and officially accepted norms, e.g., a six hour school day, a school year of 190 days, standards for libraries, student services, etc., which have been incorporated into the exemplary schools.

In one other sense, also, these can be called minimum needs. The retention rates on which the enrollment estimates are based were themselves derived from manpower studies which indicate the skill needs of the economy. Failure to meet these retention goals means more school drop-outs than the labor market can absorb. These retention goals are currently being met only in some urban schools. It does not seem probable that they can be met in general unless all the schools are brought at least to the standards of the exemplary schools. In rural and urban slum districts it will be necessary, in addition, to provide pre-school education, if the retention goals are to be met.

These retention goals are not high, in a comparative sense. They provide that, by 1972, half of those who enter elementary school will finish senior high school. At present only half of those who enter elementary school finish intermediate school.

The notes on the table headings make partially explicit the sources and methods of calculation of the figures in the tables. What follows will amplify and explain further how these numbers were obtained.

First in order to save time and to avoid the appearance of false precision, numbers were rounded at all stages of calculation. This introduces errors which may be as high as five percent but which are presumed to balance out.

TABLE I – MINIMUM TIME OF INSTRUCTION

In estimating the additional teachers and classrooms required for new enrollment and to provide for full-time instruction, present actual ratios of students to teachers were used. This use of a constant ratio during a time period in which the ratio is changing may appear questionable. But simple estimating procedures require most things to be held constant in order to estimate others. In general, the estimates of these tables are valid only if the grade system, for example, the physical distribution of schools, the rules regarding sick leave, etc., remain as they are, or as they are indicated to be. Only then will the indicated numbers of additional teachers and classrooms actually be needed. As these things change, new estimates will be required, corresponding to each change.

TABLE II – MINIMUM QUALITY OF INSTRUCTION

In the Elementary Table the first item is pre-school education. The rationale, in terms of retention rates, has already been given. The basic assumption is that all children need some form of pre-school education but that a summer program, based on Operation Head-Start, will meet the minimum needs of the more privileged half of the population. In all, two annual age-cohorts, the four and five year olds, about 150,000 children, would be elegible. The idea is to provide public facilities which would give eight weeks of pre-school education to one-half this population, presumably during the summer prior to the sixth birthday. Some children may not take advantage of these facilities, having had a larger amount of pre-school education privately provided. Of the remaining 75,000 under-privileged children it is presumed that 90% will eventually participate in a public pre-school program but that the needs will vary according to the degree of underprivilege. Ten percent are presumed to require two years of pre-school education, 15% are presumed to need one year and the rest are presumed to need a half year. All pre-school education would be on a half-day basis and teachers could thus handle 40 to 80 students annually, assuming a class size of 20. Facilities would receive a similar multiple use. The growth of enrollment, from the six to the eight to the ten year programs, is based partly on the estimated increase in the age cohorts but even more on the assumption of increasing participation in the program.

Teacher training estimates are based on the general assumption that ten percent of all class-room teachers' time should be available for training purposes and that this time will need to be substituted in the classroom. No one form of training is likely to require this much time but many kinds of training are needed for different purposes. All teachers, for example, should spend some time in curriculum centers keeping up-to-date on and helping to develop new materials and methods. There are other kinds of research also which teachers should regularly engage in, outside the curriculum centers. Teachers who are not fully qualified for new assignments need to take time for training. Teachers who have taught for five years without a break need to go back to school for a semester of refreshment and up-dating. All these forms of necessary training, and many other, taken all together, are presumed to require at least ten percent of total teaching time. The time required for teacher training could, of course, be provided by reducing the required number of classhours per subject per week. Unless this were done, however, only after new superior methods of instruction had been proven, the result would be a deterioration in the time and quality of instruction.

Provision for slow and gifted students, presumes that about three percent of elementary students are psychologically retarded and that ten percent of secondary students need remedial work. The additional teachers and facilities provided are largely for these slow students. At the elementary level, retarded children are assumed to require a teacher for every eighteen children. At the secondary level, classes of average size in remedial reading, etc. are assumed for ten percent of the students.

Estimates for amplifying the art, music, physical education, library and audio-visual programs are based, in general, on extending the standard of the exemplary schools to all schools. The calculations are very rough, as they have to be in the absence of estimates which specify the physical distribution of students by size and location of school. The kind of questions asked in making these estimates were, for example, what proportion of students now have specialized art and music instruction? What proportion of schools now have libraries and audio-visual facilities?

Estimates of increases in personnel needed for student services follow a similar pattern. There are vocational counselors, social workers and health teachers in some schools but not in all. How many would be needed to provide these services to all, on the basis of the norms of the exemplary schools? The estimates are tentative answers to these questions.

Auxiliary personnel are estimated to total one-third of teaching personnel. This is the present ratio, one which may fall below actual minimum needs, since teachers now have to perform many clerical and other non-teaching duties which are on the increase. This auxiliary personnel includes janitors, free-lunch personnel and supervisors at the school and district level. It does not include the central or regional staff of the department.

If differences between the six, eight and ten year programs are not as great as might be exepected, this may be because the estimated enrollment increases accelerate, especially in the secondary schools.

TABLE I

ADDITIONAL TEACHERS AND FACILITIES NEEDED BY THE SECONDARY SCHOOLS TO PROVIDE A MINIMUM SCHOOL DAY AND SCHOOL YEAR FOR ALL STUDENTS — TEN YEAR PROGRAM

A. ADDITIONAL TEACHERS

Required for	1966 1967	1967 1968	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976
1. Increase in enrollment	300	300	300	300	300	300	300	300	300	300
2. Elimination of interlocking enrollment	....	....	....	....	....	....	....	....	....	....
3. Elimination of teacher absences	75	75	75	75	75	75	75	75	75	75
TOTAL	375	375	375	375	375	375	375	375	375	375

B. ADDITIONAL CLASSROOMS

Required for	1966 1967	1967 1968	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976
1. Increase in enrollment	240	240	240	240	240	240	240	240	240	240
2. Elimination of interlocking enrollment	115	115	115	115	115	115	115	115	115	115
3. Elimination of teacher absences	....	....	....	....	....	....	....	....	....	....
TOTAL	355	355	355	355	355	355	355	355	355	355

1. Enrollment will increase by 106,000 according to projection 6 of the Superior Council on Education. This includes increase in the population of school age as well as progressively increasing retention rates. Teacher requirements are based on 30 students per teacher and classroom requirements are assumed to be 80% of teacher requirements.
2. There are now about 1,150 classrooms being used by two groups daily, for five hours a day each. Assuming no other changes, an equal number of classrooms would be needed to eliminate interlocking enrollment.
3. Substitutes are needed for teachers who are sick or absent for other reasons. At present absences for personal reasons total six percent of scheduled class-time; this is assumed to rise to seven percent when the new, more liberal, maternity leave provisions go into effect. In addition, substitutes are needed to fill temporarily vacant positions while these are being filled. About one percent of scheduled class-time is now lost while positions are vacant.

TABLE 11

ADDITIONAL TEACHERS AND FACILITIES NEEDED BY THE SECONDARY SCHOOLS TO PROVIDE A MINIMUM QUALITY OF INSTRUCTION FOR ALL STUDENTS – TEN YEAR PROGRAM

A. ADDITIONAL TEACHERS AND OTHER PERSONNEL

Required for	1966 1967	1967 1968	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976
1. Teacher training time	250	100	100	100	100	100	100	100	100	100
2. Program for slow and advanced students	50	50	50	50	50	50	50	50	50	50
3. Programs of art, music theatre and physical education	95	95	95	95	95	95	95	95	95	95
4. Libraries	55	55	55	55	55	55	55	55	55	55
5. Student services	85	85	85	85	85	85	85	85	85	85
6. Auxiliary personnel	305	255	255	255	255	255	255	255	255	255
TOTAL	850	640	640	640	640	640	640	640	640	640

B. ADDITIONAL CLASSROOMS AND FACILITIES

Required for	1966 1967	1967 1968	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976
1. Teacher training time	....	....	....	....	....	....	....	....	....	....
2. Programs for slow and advanced students	30	30	30	30	30	30	30	30	30	30
3. Programs of art, music, theatre, and physical education	85	85	85	85	85	85	85	85	85	85
4. Libraries	55	55	55	55	55	55	55	55	55	55
5. Renovation	245	245	245	245	245	245	245	245	245	245
TOTAL	415	415	415	415	415	420	420	420	420	420

1. To provide time for teacher training, e.g., training for provisional teachers, teachers who have taught for five years without returning to school themselves, teachers working in curriculum centers, etc.

2. To provide classes in remedial reading for ten percent of the students and to provide an enriched curriculum for about 35,000 students.

3. To provide a specialist in physical education and a specialist in one of the arts for each 500 students.

4. To provide a minimum library of books and audio-visual materials in each secondary school.

5. To provide vocational, social and health orientation to all students.

6. To provide auxiliary services for 104,000 additional students, 7,000 additional teachers and 5,275 additional classrooms.

Thus the projected additional enrollment at the secondary level is almost twice as much (1.9 times as much) after ten years as after six years. This not only requires more teachers per year for increased enrollment but also for the quality programs which, in one way or another, decrease the pupil-teacher ratio. The contrast between the three programs is also diminished by smoothing out the numbers of teachers and classrooms added, over the whole span of each program.

Note: The tables which follow are for Secondary school needs only. The original report also included similar tables for elementary school needs.

Appendix II

READING ACHIEVEMENT OF PUBLIC PRIMARY SCHOOL CHILDREN AS RELATED TO PARENTAL EDUCATIONAL LEVEL AND OCCUPATION AND OTHER VARIABLES

Since the spring of 1966, the Department of Education has been undertaking a massive endeavor to gather data which would enable the Agency to more effectively evaluate projects organized under the provisions of Title I (Law 89-10) of the Elementary and Secondary Education Act of 1965. These data have gone to make up student, facilities and personnel files in a computerized "Test and Evaluation" system being developed for the Department of Education under contract with the Federal System Division of IBM.

The Agency is now in a position where this massive effort – time and work of teachers, administrators and other personnel in administering and scoring tests and other instruments – is beginning to show results. The Agency is now able to judge whether or not these efforts have been worth the while. The computer has made it possible to obtain, in a concise tabular form, the results obtained by primary school students in reading and general ability as related to a number of affecting variables.

The report that follows deals with data being gathered for the evaluation of the summer Headstart Program, one of approximately 60 Title I Projects operating in Puerto Rico.

Since 1965 the Department of Eductaion has been conducting a Summer Headstart Program to provide certain kinds of experiences for socially disadvantaged children prior to entering the first grade. This program has in part been sustained under Title

I sponsorship, and as such is subject to annual evaluation. The Division of Evaluation is called upon to determine the extent to which the program actually contributes to later school success of Headstart children in formal learning situations. In other words, do these preliminary, primarily "socializing" experiences actually give the children a "headstart"?

During the school year 1966-67 all children (over 180,000), kindergarten through the twelfth grade, attending public school in a sample of 21 school districts selected for evaluation of Title I projects, were administered tests of general ability and reading in Spanish. In addition, specific personal and social data were obtained on each student. All of these data, test scores and the like, were stored in the memory bank (student file) of the Department computer, along with an identification number for each student. Among the information collected were the date of birth of each student, educational level and occupation of parents, and for students in the first three grades, whether or not they had attended Kindergarten or Headstart, or whether or not they were repeating the grade.

With this kind of information available on all first and second graders in the 21 districts (approximately one-fourth of the total school population at these grade levels) it was now possible to gather, compile and analyze data on variables relevant to children who had participated in Headstart Programs.

PURPOSE OF THE STUDY

Answers to a number of questions touching upon outcomes of Headstart participation could now be obtained:

1. Do children who participated in Headstart differ significantly in reading achievement after one and two years of formal schooling from those children who had no prior schooling experience?
2. Do the initial "socializing" experiences provided by Headstart significantly increase conceptual abilities (as typified by exercises in the *Prueba Colectiva Puertorriquena de Capacidad Mental*) of participating children?
3. Several studies on small groups of children in the mainland United States tended to indicate that the initial impetus of Headstart on children's achievement appeared to dissipate after children were exposed to traditional educational programs. Do we have any evidence of similar tendencies among Headstart first and second graders?

4. By holding children's environmental conditions constant (that is, equalizing kind of home background or socio-economic condition as indicated by parental education and occupation), do Headstart participants differ from other children at the same grade levels in reading and general ability?
5. Are achievement in reading and test scores in general ability related to parental education and occupation?
6. Do children at different age levels also have differential reading achievement; e.g., the older the child the higher the reading level?
7. Do boys and girls achieve in reading at the same or different levels?
8. Do children who had one whole year pre-first grade schooling (Kindergarten), show greater attainment in later reading and general ability than those children with only Headstart or no prior school experience?
9. Does type of school organization (that is, single, interlocking, or double) or zone of residence (urban or rural) appear to affect children's reading achievement?
10. Are Headstart children being selected from among the most "deprived"?

PARENTAL EDUCATION AND OCCUPATION AS DETERMINANTS OF SOCIAL STATUS:

Prior to this time in Puerto Rico it was difficult to attribute gains in achievement of one group of students over another group at the same grade, to level, to teaching method, or revised curriculum. The reason was that the Department did not have sufficient information on important variables that affect performance, for example, home environmental conditions.

From the data collected in the 21 districts sample on parental education and occupation it was possible through an adaptation of the Hollingshead Two Factor Index,[1] to place a child on a scale ranging from 14 to 77 points, in one of four "social status" levels: Lowest, Medium Low, Medium, and Medium High. Fathers or heads of families grouped under "Lowest" categorization of this scale are those having three years or less of formal schooling, and who are employed (if at all) in unskilled labor such as sugar cane cutters, garbage collectors or domestics. Highest social status category is not represented here because it includes parents with post-graduation education and who are working as bank presidents, doctors of medicine, engineers, lawyers, and the like.

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[1] August B. Hollingshead. "Two Factor Index of Social Position," 1965 Yale Station, New Haven, Conn. 1957. [Mimeo. 12 pp.]

Although this index has not been adequately tested for use in Puerto Rico in terms of establishing valid social status categories, it is believed that it can serve in two important aspects: first, as a basis for comparing achievement and ability of different groups of students, and second, to estimate the extent of "deprivation" among Puerto Rican children compared to children in the mainland United States.

The findings of this study, in most part, are in terms of level of social status of children as related to variables under consideration.

TABLE III

COSTS OF THE ADDITIONAL PERSONNEL AND FACILITIES REQUIRED BY THE SECONDARY SCHOOLS TO PROVIDE A UNIVERSAL MINIMUM OF QUALITY AND QUALITY OF INSTRUCTION – TEN YEAR PROGRAM

YEAR	Additional Personnel Accumulative	New Classrooms	Renovated Classrooms	Additional Personnel Costs[1]	Cost of new Classrooms[2]	Cost of Renovated Classrooms[3]	Other Additional Costs[4]	ANNUAL TOTALS
1966-67	1,215	525	245	4,971,780	6,489,000	1,261,750	1,655,603	14,378,133
1967-68	2,230	525	245	10,037,230	6,683,775	1,299,480	3,342,398	21,362,883
1968-69	3,245	525	245	16,065,995	6,883,800	1,338,435	5,349,976	29,630,206
1969-70	4,260	525	245	23,199,960	7,090,125	1,378,615	7,725,587	39,394,287
1970-71	5,275	525	245	31,602,525	7,302,750	1,420,020	10,523,641	50,848,936
1971-72	6,290	530	245	41,451,100	7,593,310	1,462,650	13,803,216	64,310,276
1972-73	7,305	530	245	52,953,945	7,821,210	1,506,505	17,633,664	79,915,324
1973-74	8,320	530	245	66,343,680	8,056,000	1,551,585	22,092,445	98,043,710
1974-75	9,335	530	245	81,877,285	8,297,680	1,598,135	27,265,136	119,038,236
1975-76	10,350	530	245	99,856,800	8,546,780	1,646,155	33,252,314	143,302,049
				428,360,300	74,764,430	14,463,330	142,643,980	660,232,040

[1] Salaries are assumed to increase by 10% a year over the present average salary of $310 per month.

[2] The estimated cost of classrooms includes land and equipment and is expected to increase at 3% a year over the present average of $12,000 per classroom.

[3] The estimated cost of renovating classrooms is expected to increase at 3% per year over the present average of $5,000.

[4] These include costs of retirement, insurance, materials, services such as water and light, etc., which now total about 25% of operating costs.

SUMMARY OF PRINCIPAL FINDINGS

Reading achievement and general ability measures of first and second grade students were related to variables of sex (2), age level (4), zone of residence (2), social status (4), and to prior first grade experience (kinderkarten, Headstart, none), and repeating the grade.

Reading achievement of third grade children was related to sex, zone of residence, and type of school organization.

An analysis of the data provides us with answers to questions posed above.

1. *Formal school experiences prior to entering the first grade do seem to result in greater reading achievement and level of general ability of children in the first and second grades.* When mean scores on the reading and general ability tests are examined, it was noted that at all social status levels (with one exception), the longer the period of "pre-schooling" the greater the attainment in reading and general ability. (See tables 1A-D). This finding holds true at both the first grade as well as the second grade, and holds constant when examined by sex and zone of residence, as well as by age level, except over-age children.

   Kindergarten trained children read better and have higher ability scores than Headstart trained children; and the latter in turn, read better and have higher ability scores than children with no "pre-schooling." The difference of 26.00 score points in reading between the mean of 55.25 of lowest social status first grade no "pre-schooling" children, and the mean of 88.25 of medium high first grade children with kindergarten indicated two separate populations of youngsters. The difference of about 2 score points in reading of second graders with Headstart over those with no "pre-schooling" is significant, and constant at all social status levels. These data, then, do appear to indicate that "pre-school" training, even on as limited a scale as that provided by an eight-week Headstart program does make for significant increase in conceptual abilities. Furthermore, gains in reading skills and gains in conceptualizing are maintained for a period of two years, at least, until the end of the second grade.

2. *Urban children read better and have higher level of general ability than have rural children.*

Although the department has had test data for a number of years which show the same results, it is now possible to make analyses in terms of social status. Again the same trend was found: with an increase in social status of students there is a corresponding increase in mean reading achievement and mean tested general ability. (See Tables V A-D.)

The mean scores in reading of rural lowest social status first and second graders differ by more than one standard deviation from the mean scores in reading of urban medium high social status first and second graders. The difference in mean general ability of the same groups is almost one standard deviation.

It must be pointed out, however, that about 10 percent of rural children at the lowest social status read at the average level of urban medium high social status children.

Rural children, in general, seem to be among the most educationally deprived of all school children.

3. *Girls are better readers than boys, although they do not seem to differ in level of general ability.*

When the results in reading and general ability are analyzed in terms of boys and girls in urban and rural schools (Tables VI A-D), it was found that urban girls at all social status levels are superior readers to boys within the same residential zone. Although urban boys surpass rural girls in reading in both grades at all social status levels except medium high social status second grade, the differences are not great.

On the other hand, the differences in mean general ability between boys and girls, in both grades and at all social status levels is small, and in favor of the boys.

It is now possible to state unequivocally that the rural boy, coming from a home where the head of the family has had three years or less of schooling, and, if employed as an unskilled farm laborer or the like, the child is likely to be the most deprived among all deprived children.

Yet even among these "most deprived" boys there are about 15 percent who are reading at a level comparable to the average urban girl at the same social status level.

4. *Large numbers of children after two years in the first, second and third grades are inferior readers to those children spending only one year in the grade.*

The practice of holding back children (non-promoting) in grade so that they may have more time to attain achievement norms does not appear to be supported by test results in reading. Mean scores of children repeating the first grade (11% repeating), the second grade (10% repeating) and the third grade (10% repeating) are far inferior to the mean scores of children who have spent only one year in grade. (See Tables VII A-D for first and second grade results.)

One striking finding shows that at the first grade the repeaters are at the same mean level in general ability as that of the non-repeaters, although lower in reading achievement.

Furthermore, most of the repeaters (about 75%) are concentrated in the lowest social status level.

5. *Children who are not yet six years of age when they enter the first grade read as well or better than those children who enter at the normal age for the grade.*

One of the surprising findings was the relatively large number of "under-age" children, i.e., those who entered the first grade before reaching the age of six, and their comparatively equal achievement in reading to their older peers in both the first and second grades. (See Table VIII A.)

About 18 percent of the first grade and 13 percent of the second grade are included in this group. In both general ability test results and in mean scores in reading they were practically on a par (or superior at some social status levels) with the rest of their grade groups.

An interesting finding, however, was that only 50 percent of the first grade "under-agers" fell in the lowest social status, compared to 63 percent, 79 percent and 85 percent, respectively of these children ages 6-7, 8-9, and 10-16. (See Table VIII B.)

6. *Children who attend school six hours a day are generally much better readers than children who attend classes three hours a day.*

It has long been assumed, without direct objective evidence, that there is a close relation between time spent in school and attainment of basic skills. According to results in reading in Spanish on an island-wide test administered to more than 60,000 third grade children in March 1967, the results definitely verified that assumption. (See Table IX.)

With the exception of rural children attending single (six hour) and interlocking (5 hour) programs where the latter attained slightly higher mean scores than the former, the mean reading scores increase according to the number of hours spent in school.

The apparent rural single – interlocking discrepancy may be accounted for if we were to analyze the results in terms of social status which was not available for the third grade.

We observe in these third grade reading results a possible answer to some of the urban – rural differences noted in the first and second grades where information of type of school organization was not at hand.

IMPLICATIONS

The evidence drawn from the findings on reading test results of children in the first three grades of the elementary school, and analyzed in relation to relevant variables of age, sex, zone of residence, social status, and type of school organization, should lead to a thoughtful contemplation of a number of implications for educational practice.

1. Extending kindergarten and Headstart types of programs (preferably the former) to greater numbers of children will lead to later dividends in increased level of general ability and more effective reading skills.
2. Priority of "pre-school" education should be directed to (1) rural children with the lowest social status; (2) urban children with equally low social status.
3. The differences between boys and girls in reading may mean a close look at (1) reading materials; (2) teaching methods; or (3) possible segregation for reading. The fact that a large proportion of the repeaters are boys who are also poor readers leads to the inescapable conclusion that many of these boys will be early school leavers.
4. There is a possible danger that by enrolling some students in kindergarten and Headstart, thus giving an initial advantage to a favored group, may be discriminating

against some children who might be adversely affected when they have to compete with their more favored peers in the first grade.

5. The large urban-rural differences in reading are related, undoubtedly, to double enrollment, and lead to greater numbers of rural children who leave school before completing elementary school.

6. If greater time in school leads to greater reading effectiveness, then school construction projects to eliminate double enrollment is justifiable.

7. Major attention and priority should be given to repeaters and potential repeaters. How can educators approach the formidable task of improving reading skills of so many youngsters? Automatic promotion, as bitter experience has shown, is not the answer. Remedial reading is a costly palliative. The non-graded school, if it is to be effective, calls for radical changes in teacher behavior.

   Puerto Rican education must try to identify *why* these children are having difficulties in learning to read. Physical causes? Emotional? The data now being gathered in the 21 district sample may provide the necessary clues.

   If the Agency can not find effective ways to improve reading skills of primary school children, Puerto Rican schools can look forward to the unhappy prospect of continued poor retention.

8. What is the optimum age for beginning formal schooling? The evidence shows that many children are able to initiate systematic learning experiences before the age of six. How can it be determined who are most likely to succeed? If the selection process is not careful we may tend to choose those from among the higher social status levels.

9. Some children from the lowest social status achieve as well as children from the highest status:

   (a) what are the characteristics of these children who achieve in spite of unfavorable environmental conditions?

   (b) what can be learned from these children that may help in devising programs for the poorer achievers?

10. Solutions to problems presented by evidence gathered for this study may call for radical departures from traditional educational practice.

TABLE IV A

Reading Achievement* of FIRST GRADE Students According to Kind of Prior Educational Experience, By Socio-Economic Level, April 1967

Prior School Experience		SOCIO-ECONOMIC LEVEL				
		Lowest	Med. Low	Med.	Med. High	All
Kinder	N	583	664	163	137	1547
	Mean	63.58	70.62	80.22	81.25	69.92
	S.D.	22.09	23.57	21.17	21.01	23.36
Headstart	N	1678	916	104	73	2771
	Mean	58.39	63.89	69.96	75.48	61.09
	S.D.	20.29	20.52	21.27	22.14	20.82
None	N	3946	1653	225	133	5957
	Mean	55.25	61.02	65.04	72.26	57.60
	S.D.	19.90	20.95	19.18	20.45	20.52

* Test Destrezas Basicas en Lectura

TABLE IV B

Reading Achievement* of SECOND GRADE Students According to Kind of Prior Educational Experience, By Socio-Economic Level, April 1967

Prior School Experience		SOCIO-ECONOMIC LEVEL				
		Lowest	Med. Low	Med.	Med. High	All
Kinder	N	361	585	183	99	1228
	Mean	43.24	50.23	51.61	58.38	49.04
	S.D.	18.21	18.03	16.97	17.18	18.35
Headstart	N	1080	624	97	35	1836
	Mean	37.24	42.77	45.96	52.29	39.86
	S.D.	17.44	18.43	18.09	22.77	18.24
None	N	5784	2631	303	200	8918
	Mean	35.32	40.64	44.28	51.64	37.56
	S.D.	17.26	18.62	18.96	18.65	18.09

* Prueba de Lectura, Nivel 2, Serie Interamericana

TABLE IV C

Results Obtained on the Prueba Colectiva Puertorriquena de Capacidad Mental by FIRST GRADE Students According to Prior Educational Experience and By Socio-Economic Level, January 1967

Prior School Experience		**SOCIO-ECONOMIC LEVEL**				
		Lowest	**Med. Low**	**Med.**	**Med. High**	**All**
Kinder	N	734	823	201	156	1914
	Mean	31.38	34.03	36.55	36.63	33.49
	S.D.	7.57	6.92	6.19	5.68	7.26
Headstart	N	2218	1140	123	69	3550
	Mean	29.83	32.06	33.44	33.86	30.73
	S.D.	7.81	7.16	6.87	7.19	7.66
None	N	5716	2341	326	170	8553
	Mean	28.69	31.11	32.19	34.75	29.60
	S.D.	8.00	7.83	7.10	6.30	8.01

TABLE IV D

Results Obtained on the Prueba Colectiva Puertorriquena de Capacidad Mental by SECOND GRADE Students According to Prior Educational Experience and By Socio-Economic Level, April 1967

Prior School Experience		**SOCIO-ECONOMIC LEVEL**				
		Lowest	**Med. Low**	**Med.**	**Med. High**	**All**
Kinder	N	399	642	179	96	1316
	Mean	40.75	43.10	44.18	45.08	42.68
	S.D.	6.10	5.25	4.50	5.56	5.62
Headstart	N	1279	655	91	32	2057
	Mean	38.71	40.85	41.65	40.59	39.55
	S.D.	6.83	5.91	6.40	7.89	6.64
None	N	6710	2886	328	198	10122
	Mean	38.11	39.81	40.95	42.64	38.81
	S.D.	6.87	6.48	6.30	6.12	6.81

TABLE V A

READING ACHIEVEMENT* OF URBAN AND RURAL FIRST GRADE STUDENTS BY SOCIO-ECONOMIC LEVEL, APRIL 1967

Zone		SOCIO-ECONOMIC LEVEL				
		Lowest	Med. Low	Med.	Med. High	All
Urban	N	2007	1760	348	256	4371
	Mean	59.96	66.32	74.14	77.51	64.68
	S.D.	21.30	22.22	21.14	21.94	22.33
Rural	N	5342	1837	169	104	7452
	Mean	55.37	60.45	65.02	72.10	57.07
	S.D.	19.53	20.13	19.95	20.75	19.94

* Destrezas Basicas en Lectura

TABLE V B

READING ACHIEVEMENT* OF URBAN AND RURAL SECOND GRADE STUDENTS BY SOCIO-ECONOMIC LEVEL, APRIL 1967

Zone		SOCIO-ECONOMIC LEVEL				
		Lowest	Med. Low	Med.	Med. High	All
Urban	N	2517	2205	405	238	5365
	Mean	37.96	44.87	48.40	54.45	42.32
	S.D.	18.45	18.64	18.13	17.94	19.03
Rural	N	5691	2002	210	106	8009
	Mean	33.80	37.72	41.62	50.65	35.21
	S.D.	16.61	18.35	18.94	21.05	17.39

* Prueba de Lectura, Nivel 2, Serie Interamericana

TABLE V C

RESULTS OBTAINED ON THE PRUEBA COLECTIVA PUERTORRIQUENA DE CAPACIDAD MENTAL BY URBAN AND RURAL FIRST GRADE STUDENTS BY SOCIO-ECONOMIC LEVEL, JANUARY 1967

Zone		SOCIO-ECONOMIC LEVEL				
		Lowest	Med. Low	Med.	Med. High	All
Urban	N	2876	2437	470	276	6059
	Mean	30.80	32.84	34.85	35.97	32.17
	S.D.	7.74	7.20	6.70	6.29	7.54
Rural	N	7221	2328	216	131	9896
	Mean	28.78	30.93	31.75	33.84	29.42
	S.D.	7.97	7.80	7.42	6.35	7.97

TABLE V D

Results Obtained on the Prueba Colectiva Puertorriquena de Capacidad Mental by Urban and Rural SECOND GRADE Students by Socio-Economic Level, April 1967

		SOCIO-ECONOMIC LEVEL				
Zone		**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
	N	2910	2419	406	242	5977
Urban	Mean	39.53	41.70	42.67	43.69	40.79
	S.D.	6.44	5.74	5.86	6.28	6.26
	N	6688	2212	229	100	9229
Rural	Mean	37.75	39.07	40.38	41.79	38.18
	S.D.	6.95	6.64	6.34	6.20	6.90

TABLE VI A

Reading Achievement[*] of Urban and Rural Boys and Girls In the FIRST GRADE by Socio-Economic Level, April 1967

			SOCIO-ECONOMIC LEVEL				
Zone			**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
Urban		N	992	854	179	118	2143
	Girls	Mean	61.42	68.54	75.98	79.19	66.45
		S.D.	21.51	22.24	21.72	21.92	22.51
		N	1015	906	169	138	2228
	Boys	Mean	58.53	64.23	72.20	76.07	62.97
		S.D.	21.00	22.01	20.40	21.94	22.03
Rural		N	2586	897	88	44	3615
	Girls	Mean	56.87	63.20	67.56	72.05	58.88
		S.D.	19.50	20.17	18.62	20.87	19.94
		N	2756	940	81	60	3837
	Boys	Mean	53.96	57.83	62.27	72.13	55.37
		S.D.	19.45	19.76	21.07	20.83	19.79

[*] Destrezas Basicas en Lectura

TABLE VI B

Reading Achievement[*] of Urban and Rural Boys and Girls In the SECOND GRADE by Socio-Economic Level, April 1967

Zone			SOCIO-ECONOMIC LEVEL				
			Lowest	Med. Low	Med.	Med. High	All
Rural		N	1245	1066	191	114	2616
	Girls	Mean	39.93	47.26	51.36	56.31	44.46
		S.D.	18.68	18.32	17.37	18.38	19.02
		N	1272	1139	214	124	2749
	Boys	Mean	36.04	42.64	47.75	52.73	40.28
		S.D.	18.03	18.67	18.43	17.43	18.83
Urban		N	2775	922	109	57	3863
	Girls	Mean	36.31	40.37	43.17	54.46	37.74
		S.D.	16.74	18.30	19.17	19.45	17.47
		N	2916	1080	101	49	4146
	Boys	Mean	31.41	35.46	39.95	46.22	32.84
		S.D.	16.12	18.10	18.63	22.14	16.99

[*] Prueba de Lectura, Nivel 2, Serie Interamericana

TABLE VI C

Results Obtained on the Prueba Colectiva Puertorriquena de Capacidad Mental by Urban and Rural Boys and Girls In the FIRST GRADE by Socio-Economic Level January 1967

			SOCIO-ECONOMIC LEVEL				
Zone			Lowest	Med. Low	Med.	Med. High	All
Urban		N	1394	1145	228	130	2897
	Girls	Mean	30.93	32.71	34.84	35.68	32.15
		S.D.	7.57	7.16	6.98	6.66	7.45
		N	1482	1292	242	146	3162
	Boys	Mean	30.67	32.96	34.85	36.22	32.18
		S.D.	7.89	7.24	6.45	5.95	7.61
Rural		N	3423	1109	110	55	4697
	Girls	Mean	28.68	31.16	31.24	33.87	29.39
		S.D.	7.80	7.77	7.60	6.57	7.87
		N	3798	1219	106	76	5199
	Boys	Mean	28.86	30.73	32.27	33.82	29.44
		S.D.	8.11	7.82	7.24	6.23	8.07

TABLE VI D

RESULTS OBTAINED ON THE PRUEBA COLECTIVA PUERTORRIQUENA DE CAPACIDAD MENTAL BY URBAN AND RURAL BOYS AND GIRLS IN THE SECOND GRADE BY SOCIO-ECONOMIC LEVEL, APRIL 1967

			SOCIO-ECONOMIC LEVEL				
Zone			**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
Urban	Girls	N	1386	1154	190	122	2852
		Mean	39.20	41.52	42.45	43.98	40.56
		S.D.	6.22	5.87	5.57	6.48	6.21
	Boys	N	1524	1265	216	120	3125
		Mean	39.83	41.86	42.86	43.69	41.00
		S.D.	6.63	5.62	6.11	6.09	6.29
Rural	Girls	N	3154	1016	112	54	4336
		Mean	37.40	39.09	39.77	42.67	37.97
		S.D.	6.98	6.42	6.47	5.81	6.89
	Boys	N	3534	1196	117	46	4893
		Mean	38.08	39.06	40.57	40.76	38.40
		S.D.	6.90	6.83	6.17	6.54	6.89

TABLE VII A

COMPARISON OF READING ACHIEVEMENT AND GENERAL ABILITY OF STUDENTS REPEATING THE FIRST GRADE WITH ALL FIRST GRADE STUDENTS BY SOCIO-ECONOMIC LEVEL, 1967

			SOCIO-ECONOMIC LEVEL				
Test	**Category**		**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
Prueba Colectiva de Capacidad Mental	All First Grade	N	10097	4765	686	407	15955
		Mean	29.35	31.91	33.87	35.28	30.46
		S.D.	7.95	7.56	7.08	6.38	7.92
	Repeaters	N	1221	362	27	8	1618
		Mean	30.33	32.13	36.04	35.25	30.85
		S.D.	7.81	7.43	6.90	5.28	7.77
Destrezas Basicas en Lectura	All First Grade	N	7349	3597	517	360	11823
		Mean	56.62	63.32	71.16	75.94	59.88
		S.D.	20.13	21.38	21.18	21.71	21.17
	Repeaters	N	989	277	15	12	1293
		Mean	55.40	58.87	69.20	62.00	56.37
		S.D.	18.64	16.93	19.06	24.34	18.44

TABLE VII B

COMPARISON OF READING ACHIEVEMENT AND GENERAL ABILITY OF STUDENTS REPEATING THE SECOND GRADE WITH ALL SECOND GRADE STUDENTS BY SOCIO-ECONOMIC LEVEL, 1967

			SOCIO-ECONOMIC LEVEL				
Category	**Test**		**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
Prueba Colectiva de Capacidad Mental	All Second Grade	N	9598	4631	635	342	15206
		Mean	38.29	40.44	41.84	43.13	39.20
		S.D.	6.85	6.32	6.13	6.31	6.77
	Repeaters	N	1152	404	30	12	1598
		Mean	38.02	39.20	39.83	41.67	38.38
		S.D.	6.82	6.25	6.67	6.97	6.70
Prueba de Lectura Nivel 2	All Second Grade	N	8208	4207	615	344	13374
		Mean	35.08	41.47	46.08	53.28	38.06
		S.D.	17.30	18.84	18.68	19.00	18.40
	Repeaters	N	933	320	26	8	1287
		Mean	23.08	30.22	29.81	33.13	28.68
		S.D.	14.48	15.27	15.89	14.88	14.73

TABLE VIII A

READING ACHIEVEMENT[*] OF FIRST AND SECOND GRADE STUDENTS WHO WERE UNDER AGE AT TIME OF BEGINNING THE GRADE, AS COMPARED TO READING ACHIEVEMENT OF CHILDREN OF NORMAL GRADE AGE, BY SOCIO-ECONOMIC STUDENTS 1967

			SOCIO-ECONOMIC LEVEL				
Grade	**Age**		**Lowest**	**Med. Low**	**Med.**	**Med. High**	**All**
I	Under 6	N	1096	781	139	123	2139
		X	55.23	62.81	69.24	78.70	60.26
		S.D.	20.68	21.69	19.74	20.58	21.91
	6 - 7	N	5361	2614	364	229	8568
		Mean	56.60	63.74	71.98	74.84	59.92
		S.D.	19.91	21.38	21.69	22.07	21.06
II	Under 7	N	913	759	168	109	1949
		Mean	35.78	43.14	46.81	53.69	40.58
		S.D.	17.11	18.71	17.34	17.43	18.50
	7 - 8	N	5842	3051	429	228	9550
		Mean	35.68	42.03	46.18	53.60	38.61
		S.D.	17.41	18.73	19.01	19.64	18.43

[*] First Grade: Destrezas Basicas en Lectura
Second Grade: Prueba de Lectura, Nivel 2, Serie Interamericana

TABLE VIII B

Distributed by Percent of FIRST GRADE Students by Age And Socio-Economic Level, April 1967

Age						
Under 6	N	1096	78.1	139	123	2139
	%	51.2	36.5	6.5	5.7	(18.1)
6 - 7	N	5361	2614	364	229	8568
	%	62.7	30.5	4.2	2.6	(72.4)
8 - 9	N	727	175	12	8	922
	%	78.8	18.9	1.3	1.0	(7.8)
10 - 16	N	165	27	2	0	194
	%	85.0	14.0	1.0	0	(1.6)
All	N	7349	3597	517	360	1185
	%	62	30	4	3	(1.1)

TABLE IX

Reading Achievement* of THIRD GRADE STUDENTS by Type of School Organization and Urban and Rural Residence, March 1967

		SOCIO-ECONOMIC LEVEL		
Organization		**Urban**	**Rural**	**Private**
Single	N	6,907	6,545	1,906
	Mean	53.76	44.20	71.41
	S.D.	19.81	19.15	16.93
Inter locking	N	4,409	1,861	58
	Mean	52.02	45.30	69.98
	S.D.	19.60	19.64	14.95
Double	N	1,151	7,510	76
	Mean	45.72	41.24	69.46
	S.D.	20.37	19.11	14.86

Comprehensive Planning in State Education Agencies

PART III

A COMPREHENSIVE PLANNING PROCESS FOR THE STATE DEPARTMENT OF PUBLIC INSTRUCTION

Suitable for Application in
Iowa Education Systems

Written by
Joe Wolvek
Project Director

Iowa Department of Public Instruction
Des Moines, Iowa
1968

State of Iowa

DEPARTMENT OF PUBLIC INSTRUCTION
Des Moines, Iowa, 50319

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Financed by funds provided under the
Elementary and Secondary Education Act of 1965
(Public Law 89-10, Title V, Section 505)

FOREWORD

The concept of planning as a process has applicability to education systems at all levels, ranging from the local school system at one end of the organizational continuum to the U.S. Office of Education, at the other end.

Not only is this report valuable for state education agencies, but by replacing SEA (which stands for State Education Agency), wherever it appears in this report, with LEA (Local Education Agency) or other letter symbols representing the reader's level of school organization, the planning process concepts presented are worthy of any educator's serious consideration.

This report is disseminated with the hope that it will stimulate school leaders to focus attention upon the area of planning as an emerging process which can support educational decision making as a leadership function.

Paul F. Johnston
State Superintendent of
Public Instruction

ACKNOWLEDGEMENTS

The writer is greatly indebted to the men and women in Iowa — to those who serve in the field of education, and to those who are the patrons of the educational system, for their continuing concern and cooperation in striving to make the Iowa public schools the best in the nation. Also, I am indebted to my colleagues, Dr. Paul M. Mitchum, Arthur C. Anderson, and Bernarr S. Furse for their effective support of and participation in the CPSEA project activities which culminated in the publication of this report. And to Miss Rebecca Kemble, for her competencies in stenographic and typing skills.

JOSEPH WOLVEK

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INTRODUCTION

The format of the Iowa report is designed to indicate the outcomes of a one year study as they relate to the Iowa state education agency's objectives.

Table 1 shows the outline rationale utilized for this report. This representation may help the reader to better understand how the material in each of the sections of this report is related to the overall objectives of the multi-state project.

TABLE 1

ORGANIZATION OF MATERIAL CONTAINED IN THE IOWA REPORT

CONTENTS OF REPORT	IOWA STATE EDUCATION AGENCY (SEA) OBJECTIVES	RELATED MULTI-STATE PROJECT OBJECTIVES
CHAPTER 1 Comprehensive Planning: A perceived need	Identify the most feasible way in which the Iowa SEA may improve its capability and functional operation for planning.	Identify a variety of ways by which state education agencies may organize for planning.
CHAPTER 2 Planning: Functions Processes Techniques	Identify basic process concepts by which planning may be operationalized for the purpose of providing information required to support all levels of SEA decision making.	Identify sources of data inputs which are necessary to support the planning function. Identify processes and techniques necessary for planning in State Education Agencies.
CHAPTER 3 Structure	Identify desirable organizational structure and role of planning unit. Identify desirable place of planning unit for line or staff roles within the SEA organizational structure.	Identify the in-agency role of a planning unit and its relationship to other operating divisions.
CHAPTER 4 Staff Development	Identify anticipated planning unit staff responsibilities and develop descriptions of related planning unit staff competencies. Identify in-service training requirements essential to: maintaining in-house planning unit staff competencies at a desired level providing leadership for out-of-house public school agencies development of planning capabilities.	Identify inter-agency relationships and linkage to other state or regional planning missions. Identify the personnel skills and competencies needed for planning.
CHAPTER 5 Recommendations	Identify ideas to be explored for short, intermediate, and long range goals whereby practical planning capacities of the SEA may be developed in keeping with anticipated demands placed upon SEA decision makers by the real world environment.	Report variety of SEA Planning Strategies in Multi-State CPSEA Publication.

CHAPTER 1

Comprehensive Planning: A Preceived Need

JOSEPH WOLVEK [*]

In the State of Iowa, planning and programming by the State Department of Public Instruction are activities which are authorized by legislation.[1]

During the 1965-66 school year, a new organizational structure for the State Education Agency (SEA) was adopted by the State Board of Public Instruction. This reorganized structure included a Planning, Development, and Evaluation staff (see Fig. 1). The structural design is such that this staff, consisting nominally of eight consultant positions, is directly responsible to the State Superintendent with secondary responsibilities to the branches in the Department, both directly and through the Office of Assistant Superintendents.

The primary purpose for which the Planning, Development, and Evaluation staff was created, was the development of new programs and concepts of education as assigned by the State Superintendent of Public Instruction.

Individual staff members were assigned to top priority tasks, such as assisting the sixteen Area Education Districts with problems directed to the improvement of education, implementing a Study of Elementary and Secondary Education in Iowa, planning and developing of a reorganized program of vocational rehabilitation services as an integral component of the SEA, developing school standards in cooperation with the Advisory Committee on Standards, assisting school officials in researching legal statutes and opinions, editing the quadrennial edition of School Laws of Iowa and departmental rules for the Department Rules Review

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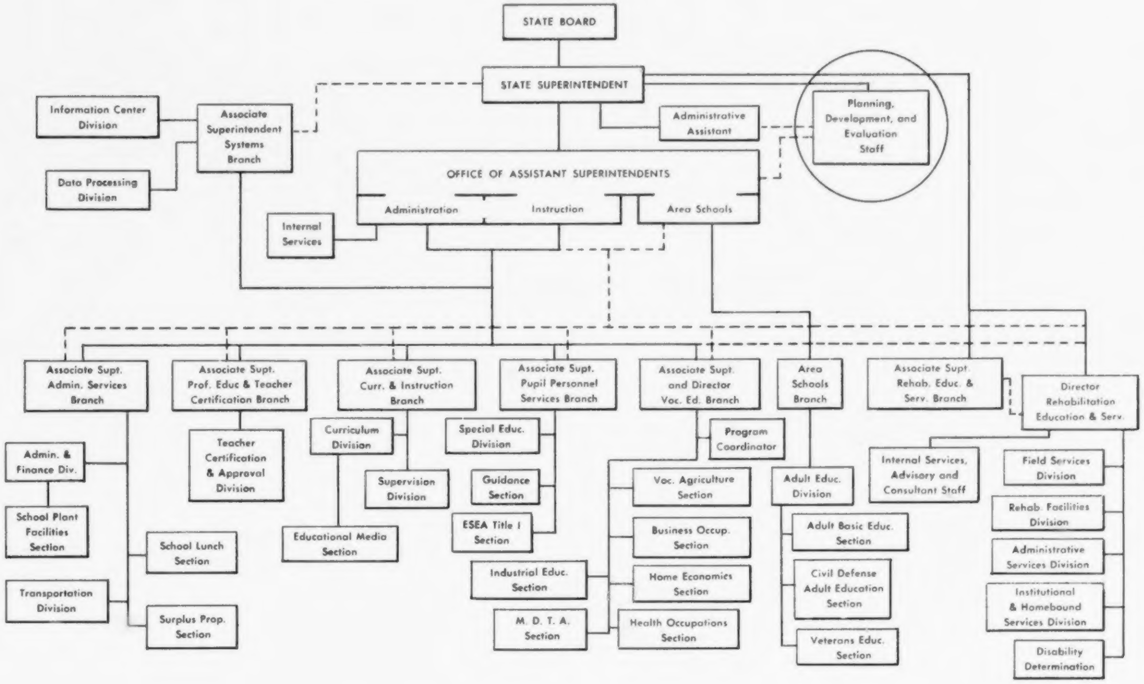
[*] Joseph Wolvek was formerly consultant for the Comprehensive Planning Project and presently personnel officer for the Iowa State Department of Public Instruction. Mr. Wolvok trained in speech pathology and audiology at Brooklyn College and the University of Oregon and has completed advanced instruction in curriculum coordination at the University of Northern Iowa. He has published articles in Midland Schools the Journal of the Iowa State Education Association, and in the Iowa Medical Journal.

[1] School Laws of Iowa, State of Iowa, 1966. (Section 257.9 subsection 1; Section 257.10 subsection 6, 7, 8, 9; Section 257.17 subsection 2, 3; Section 257.18 subsection 18.)

FIGURE 1

PLACE OF PLANNING, DEVELOPMENT, AND EVALUATION STAFF IN THE SEA ORGANIZATION STRUCTURE

State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
ORGANIZATION CHART


STATE BOARD
STATE SUPERINTENDENT
Administrative Assistant
Planning, Development, and Evaluation Staff
Information Center Division
Associate Superintendent Systems Branch
Data Processing Division
OFFICE OF ASSISTANT SUPERINTENDENTS
Administration
Instruction
Area Schools
Internal Services
Associate Supt. Admin. Services Branch
Associate Supt. Prof. Educ & Teacher Certification Branch
Associate Supt. Curr. & Instruction Branch
Associate Supt. Pupil Personnel Services Branch
Associate Supt. and Director Voc. Ed. Branch
Area Schools Branch
Associate Supt. Rehab. Educ. & Serv. Branch
Director Rehabilitation Education & Serv.
Admin. & Finance Div.
School Plant Facilities Section
Transportation Division
School Lunch Section
Surplus Prop. Section
Teacher Certification & Approval Division
Curriculum Division
Supervision Division
Educational Media Section
Special Educ. Division
Guidance Section
ESEA Title I Section
Industrial Educ. Section
M. D. T. A. Section
Program Coordinator
Voc. Agriculture Section
Business Occup. Section
Home Economics Section
Health Occupations Section
Adult Educ. Division
Adult Basic Educ. Section
Civil Defense Adult Education Section
Veterans Educ. Section
Internal Services, Advisory and Consultant Staff
Field Services Division
Rehab. Facilities Division
Administrative Services Division
Institutional & Homebound Services Division
Disability Determination

Committee, and assisting in the planning and development of strengthened departmental relationships with various federal, state, and community programs.

The above assignments have been carried out in depth by individual planning staff consultants, leaving only a limited amount of time in which to coordinate the overall task of general planning for the SEA.

Early in 1967, the Iowa Superintendent of Public Instruction discussed with a number of other chief state school officers a felt need to develop a practical and systematic procedure for educational planning. Discussion focused on designing and implementing SEA planning staffs to identify ways which would guide prospective future state educational planning activities into those channels showing the greatest promise for identifying and attaining desirable objectives. The result of these talks was a cooperative effort through a multi-state project to identify potential models for developing specialized planning capabilities in SEA's. The multi-state and Iowa project objectives are shown in Table 1. The multi-state activities included a training program attended by the project staff from each of the cooperating states; periodic meetings of project staffs to share ideas, experiences, and problems; and as the project neared termination the planning of a summary report defining comprehensive educational planning and a descriptive model of a Comprehensive Planning Process for each of the cooperating state education agencies. These state reports were to be published in a combined multi-state document. Its purpose was to indicate some of the ways possible by which state education agencies might develop a comprehensive, integrated educational planning program. Such programs to be directed toward achieving maximum utilization of resources in the development of state educational programs and in providing optimum services and leadership to the local school systems.

This chapter is a description of the methods employed by the Iowa project to achieve the project objectives.

IMPLICATION FOR CHANGE

The expressed intent of the Iowa SEA for participating in the multi-state project was to improve its overall planning capabilities. This objective was formulated because of a felt need for change, which may have been motivated by reasons ranging from identified gaps in the planning capacity of the SEA to the desire to restructure planning outcomes. It included also a desire to provide a greater range of realistic decision alternatives for SEA policy makers and administrators. Whatever the reason or reasons, the Iowa project staff believed that the ability to effect change for planning was as essential to the SEA as the identification of objectives underlying the improvement of its planning capabilities. For this reason, the project staff has been guided, both in the conduct of the study and in the identification of SEA objectives, by a set of principles upon which effecting change depends. The principles identified and used may be summarized as:

1) Change implies movement from *what is now* to *what might be*. Before change for an organization is indicated, one must have

- a) a valid understanding of *what is now*,
- b) a valid understanding of *what might be* in terms of: *what is desired by the real world environment*, and *practical specifics at the functional or operational level of the organization*, and
- c) a reason for change in terms of a valid understanding of what is desired by the real world environment that is not being accomplished by *what is now*.

2) Change without trauma is best effected gradually, paced to an organization's ability to accept and assimilate it.

3) Change is best accepted by an organization if it comes from within as a result of felt need by the organization elements that control its ability to change.

4) Change is best assimilated by an organization if the change provides empirical evidence that it:

- a) endures the test of time in achieving desired ends, or,
- b) sets the stage upon which acceptance of sequentially related phases of change depend.

ESTABLISHMENT OF SEA PLANNING CRITERIA

Before the project staff initiated construction of a planning model suitable for the SEA, a set of planning criteria was drafted, based upon (1) the principles of change identified earlier, and (2) validity feed-back information we had received from elements in the SEA system, as indicated in the document hisory of the criteria.

A STATEMENT OF BASIC PLANNING PRINCIPLES TO SERVE AS CRITERIA FOR STATE PLANNING PROJECT STAFF EFFORTS[1]

Document History

Submitted to	*For Purpose*	*Action Taken*
State Superintendent Mr. Paul F. Johnston	Review and Evaluation	Approved
Mr. Walter T. Edgren Assistant Superintendent	Assessment	Excellent
Dr. LeRoy Jensen Assistant Superintendent	Assessment	Good
Associate Superintendents (Cabinet)	Assessment	Positive Consensus
Supervisory & Professional Personnel of SEA	Assessment	Positive Consensus

Definition of Terms

Comprehensive

(Exists in two dimensions: Depth and scope)

a) *Depth*: the application of a detailed systems analysis concerning any given problem or set of related problems. (Depends upon logic model indicating sequential structure necessary to the ordering of identification, study, and analysis activities.)

b) *Scope*: the identification of present or anticipated problems.

Input(s)

Refers to material which a process utilizes.

Model

A generic pattern which may be applied to a specific process or related set of processes.

Planning

A process of preparing information in the form of a set of alternatives and consequences of alternatives to aid in decision making.

Problem

An event or activity that occurs or develops in a manner which deviates from the anticipated or desired.

Process

An analytic activity which utilizes material provided for the purpose of producing a desired product.

Scientfic Method

A process for identifying: needs, related problems, possible solutions, and testing the validity of solutions.

System

The sum total of elements working independently and interdependently within an environment to which a problem may be directed.

Valid

Consistent with reality.

List of Criteria

It is the responsibility of the State Education Agency to develop a comprehensive, integrated educational planning program aimed at achieving maximum utilization of resources in the development of the State educational program and providing otpimum services and leadership to the local, intermediate and area systems.

Comprehensive planning is a research oriented service function undertaken on behalf of policy and decision makers in need of valid information which is pertinent to their tasks.

A comprehensive planning unit works to provide information that may be utilized within the structure of existing organization.

The information produced as a result of comprehensive planning to help identify a solution to a problem must be consistent with the underlying causes of the problem, and must not be distorted due to an inadequancy or bias of the planning process itself.

Valid information is gained from involving factors of the environmental system related to a problem, and not from assumptions made by planning personnel.

"Long range (planning)" and other modifiers are not characteristics of the planning process. Such modifiers are most appropriate in describing the nature of a problem input which at times may be subjected to the planning process.

Although the process of good decision making at all levels of administration utilizes the model of the scientific method, the nature of decisions at various administrative levels varies, thus requiring different information as a result of different problem inputs.

From the viewpoint of feasibility and efficiency it is desirable for each major level of organization, i.e., local school district, intermediate school structure, area school district, state education agency, regional multi-state area, and U.S. Office of Education to develop planning units designed to cope with the variety of problems encountered at each respective level.

To maximize comprehensive planning it is desirable to maintain an efficient communications network between the different levels of educational organization and between social institutions, industry, and governmental agencies engaged in activities which are of concern to education.

The administrative structure (SEA) which has legal authority for implementing a planning unit should identify a generic model which is indicative of:

1) a delineation of scope of functions in which the unit is to engage;
2) the administrative structure of the unit;
3) the place of the planning unit in the organizational structure;
4) a description of responsibilities of unit personnel
5) a description of desirable professional background of each member of the unit
6) and a description of adequate support services and necessary housing requirements[1]

COMPREHENSIVE EDUCATIONAL PLANNING

Planning Concepts

Among the first tasks facing the SEA project staff was the formulation of a valid operational definition of the activity to which the project was addressed. In identifying what is meant by comprehensive educational planning as it relates to the SEA, staff members studied definitions provided in literature from a variety of sources; considered concepts of experts which were presented in the multi-state project training sessions; and obtained opinions from elements of the real world environment. Opinions were solicited from policy and administrative decision makers from a variety of educational institutions, including the SEA, and representatives from a cross section of political, social, business, and industrial agencies and institutions located within the state.

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[1] **A Statement of Basic Planning Principles to Serve as Criteria for State Planning Project Staff Efforts,** Iowa Project Unit, CPSEA, Document Index No. 1, August 7, 1967.

Two concept were prevalent, which served to dichotomize the definition of the term "comprehensive educational planning."

The first concept was dubbed *traditional*. It defines planning as a method for carrying out a pre-determined design. Proponents of this concept tend to see comprehensive educational planning as a master blueprint indicating all of the goals worth achieving and the methods for attaining them.

The second concept was dubbed *emerging*. It defines planning as a multi-level process for providing information upon which decision making is dependent. Proponents of this concept tend to see comprehensive educational planning, focusing at one level upon information concerning the identification of worthy objectives, goals, and desires of the real world environment. At another level, it focuses upon providing information which would identify the best possible allocation of resources and time necessary for the attainment of specified performance. At a third level, it focuses upon information necessary to the evaluation of performance, or goal attainment.

The next step for the project was to draft an operational definition of comprehensive educational planning consistent with the principles for effecting change identified earlier and to which the planning staff was committed. This definition focused upon three important factors: educational planning, problem inputs, and comprehensiveness.[1]

Educational Planning. a process of preparing information in the form of a set of alternatives together with estimates of the consequences of these alternatives, to aid in decision making for educational policy formulation and administrative action.

Problem Inputs. for purpose of decision making, a problem input is any event or activity that occurs or develops in a manner which deviates from a desired objective or goal.

Comprehensive. this term is defined with regard to both scope and depth:

---

[1] Joseph Wolvek, **Orientation to the Planning for Educational Priorities in Iowa Conference,** Department of Public Instruction, Pub. No. 7670-840CP (Des Moines, Iowa, July 27, 1967), p. 3.

1) scope: recognizing human limitations for identifying all elements which the term comprehensive implies, it is essential that the planning process is designed to allow for:

a) continuous renewal and updating as integral components of the process and,

b) effective processing of problem inputs that may be encountered in the future.

2) depth: the application of a detailed analysis concerning any given problem input, or set of related problem inputs which will, (a) define such inputs in a logically sequential order prerequisite to the identification, study and analysis of the underlying causitive factors with which the planning process must be concerned and (b) perform the identification and study of related factors requisite to decision making consistent with the world of reality.

OPERATIONAL DEFINITION

Comprehensive educational planning is a process to produce valid information in the form of alternative courses of action, together with predicated consequences of such alternatives, to aid decision making by those engaged in educational policy formulation and administration. The process should be capable of providing information relative to any educational problem input and should incorporate self renewal and updating as essential features.

It was important that this operational definition be tested with the real world environment. This test would be conducted to ascertain if it would be acceptable and, in that sense, a valid construct for effecting change, or if it would be rejected, thus barring the possibility of operational application.[2] This and other techniques utilized in the study which provided a basis for testing concepts with elements of the real world environment (RWE) will be referred to in the remainder of this report as *validity feedback looping*. (See Appendix B for a model indicating how the communication process may be utilized for validity feedback looping purposes in the SEA)

---

[2] At this point it is appropriate to indicate that the project staff attempted to validate all of the concepts which have emanated from this study. Realizing that the concepts for planning with which the study was concerned mostly dealt with non-quantifiable data, great care was taken to design tests of validity which were consistent with the logic of a research approach. This was a directed effort to keep the introduction of biased data outcomes to an absolute minimum possible.

Although the limits imposed upon the length of this report will not make it possible to illustrate how each concept was validated, it is important to offer an example of a technique utilized by the project staff which, in addition to other things, provided a validation vehicle for its operational definition of comprehensive educational planning. This example is presented in Appendix A and will serve to illustrate what is meant by "the logic of a research approach in validating nonquantifiable concepts."

With regard to the project staff's operational definition of comprehensive educational planning, the outcomes of the activity reported in the aforementioned technique (Appendix A) indicated consensus for the following points:[1]

> 1) The need for clarifying comprehensive educational planning is supported by the conclusion: ". . . 'Planning' itself . . . is a problem term and we had better remember always that people are going to react to planning on the basis of what they conceive planning to mean. Any group involved in the planning process will have to try to give interested groups and persons some basic common meanings for these terms with which they can live." . . .
>
> 2) ". . . Although five times as many respondents were favorable to the concept of planning as were unfavorable . . . so we can act and not always just be reacting . . ." a more important indicator of the acceptance of the concept of validating information with the real world environment which is contained in the operational definition is found in the conclusion . . . "the success of a statewide educational planning agency will vary directly and importantly with the extent of participation by various groups in Iowa in its development and deliberations."
>
> 3) The need for an operational definition of planning as an *ongoing process* is supported by the conclusions: ". . . In a highly complex society, with its fantastic shading and blending of individual contributions, almost everyone has to cope with some deep psychological concerns about his significance and worth as an individual human being. A great deal of this relates to his perception of his ability to control — or, at the very least, influence — the things that happen to him and to his family. He wants, without question, the very 'best' education for his offspring — but he damn well wants to have a say in what 'best' is going to mean . . . a planning group in the State Department of Public Instruction would have to expect and live with a great lack of uniformity . . ." out of context, but applicable is the statement, "One shouldn't be un-

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[1] **Plan for Planning,** (Appendix C), Iowa Project Unit, CPSEA, Document Index No. 2, November 19, 1967.

happy about this. If everyone were complacent about current affairs, there would be little incentive to change."

The following chapter of this report describes a model for planning which was formulated within the spirit, meaning, and constraints of concepts validated in the Iowa real world environment (RWE). Such planning may be undertaken by a specialized planning unit or by operating divisions of the SEA, or preferably, by both.

CHAPTER 2

Planning: Functions, Processes, Techniques

Comprehensive educational planning is an area of endeavor which concerns itself with functions, processes and techniques that operate in a different manner at each level of decision making within the SEA. This section will define functions, processes and techniques basic to comprehensive planning in general and specifically as they relate to each major level of SEA decision making.

THE PLANNING FUNCTION

The function of an SEA planning unit is not to make decisions, but to focus instead upon providing solution-oriented information related to problems faced by those who are decision makers. The range and scope of problems with which a planning unit may work is controlled on the one hand by the place of the planning unit within the SEA organizational line and staff structure, and on the other hand by the screening mechanism which establishes the priority of and the channels for problem inputs assigned to the planning unit. Within these constraints, planning may be directed to a variety of functions, including:

1) the identification and definition of critical problems in education

2) establishing the goals of education and the new demands education must fill — for work, for living, and for economic growth

3) identification of new tools of education — what they are, their benefits and limitations, when, where and how to use them, where and how to obtain them

4) investigating successful new educational applications to profit from the experience of others

5) charting practical action programs incorporating 1, 2, 3, and 4 above

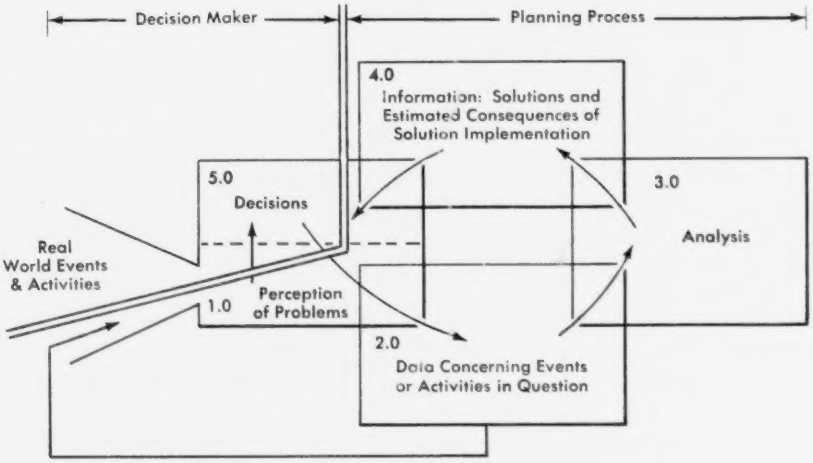
6) helping to influence and implement change through mutually advantageous and necessary cooperation between industry, education, and government; sharing "know-how" and "know-what"; gaining local support and action; public information and political action; and training educators for the roles and responsibilities of leadership.

THE PLANNING PROCESS

As defined in the introductory section, SEA planning is acceptable as a process which focuses upon the provision of solution oriented information dealing with problem inputs provided by SEA policy and administrative decision makers. The nature of the information will vary as the nature of the problem input varies. However, the process is one which is stabilized upon the components depicted in Figure 2, with the relative degree of successful process application being dependent upon *communication*, the cement which holds the information components together in a cohesive, integrated, meaningfully oriented pattern.

FIGURE 2

PLANNING PROCESS INFORMATION COMPONENTS


Decision Maker
Planning Process
4.0
Information: Solutions and Estimated Consequences of Solution Implementation
5.0
Decisions
3.0
Analysis
Real World Events & Activities
1.0
Perception of Problems
2.0
Data Concerning Events or Activities in Question

Solution oriented information is dependent on a variety of data. The first type of data is derived from the statement of the problem input. A problem is an event or activity that occurs or develops in a manner which deviates from what is anticipated or desired by an SEA decision maker. It becomes a planning process input when SEA planners are requested to provide information that will allow decision makers to modify events or activities in keeping with what is desired or desirable. Thus, the identification of the decision maker's criteria which defines the desired or desirable, becomes data which must be considered in the provision of solution oriented information.

The second type of data is derived from the events or activities in question. Such data is processed in the attempt to identify events or activities as they are in reality. This is important in providing a base of information relative to *what is now*. It is at this point that the decision maker may be informed concerning erroneous assumptions that may have been made relative to the events or activities in question. If such is the case the planning process cycle may terminate for the given problem input. However, if it is found that an erroneous assumption has not been made, this base of data derived provides a logical prerequisite for providing information in the next phase of the planning process.

The next phase in the planning process provides information derived from a system analysis of the elements relating to the problem. This analysis utilizes the experience and professional expertise of planners, as well as research methodology and a variety of planning techniques oriented to the production of synthesized information. This information is reported in the next phase of the process in the form of:

1) a variety of solution alternatives stated as strategy, functions, tasks, methods, means, and performance necessary to redirect events or activities in keeping with what is desired or desirable and,

2) the estimated potential effectiveness and cost, in the broad sense, of each solution alternative.

PLANNING TECHNIQUES

In general, planning techniques can be considered to consist of:

1) research mehodology models and statistical tools focusing upon sequentially interdependent parameters to be considered in problem analysis, i.e., such tools as systems analysis and systems synthesis (See Appendix C),

2) ways by which information derived from problem analysis may be validated; these may range from validity feedback looping with elements in the real world environment for one type of problem, to the utilization of activity or event networks to monitor achievements in the flow in time for another type of problem, and

3) the skill with which planners, by virtue of education, experience and intelligence, are capable of a) utilizing planning tools, b) identifying significant elements related to a given prob-

lem, c) establishing rapport and communications with decision makers and others, and d) providing training in the use of planning techniques to professional personnel in the SEA.

This last point, providing inservice training in planning to the SEA professional staff, is an essential technique. The criterian stated earlier, "from the viewpoint of feasibility and efficiency it is desirable for each major level of organization – local school district, intermediate school structure, area school district, SEA, regional multi-state, and U.S. Office of Education – to develop planning units designed to cope with the variety or problems encountered at each level . . ." may be extended to apply to the various levels of operation within each of the major levels of organiaztion. We do not mean to imply that each operating level of an organization should develop a comprehensive planning unit. We do mean that the closer planning is conducted to the level of organization at which a given problem exists the more effective that planning will be. For this reason, in-service training in planning within the SEA is in itself a planning technique utilized by a planning unit. Such training will increase efficiency of agency operations, establish SEA in-house communications networks based upon common referents in technical language and concepts, and reduce the overall number of problems, directed to the planning unit, allowing it to concentrate upon complex priority problems which by their nature may require coordination of an agency-wide planning effort.

Whether a problem falls within the scope and extent of the function of the SEA planning unit will be determined by,

1) the desire of a decision maker to refer a given problem to the planning unit,

2) the channels established by the hierarchy of decision makers to screen problems for referral to the planning unit, and

3) the priority weighting established for a given problem by the hierarchy of SEA decision makers.

But, whether a problem is identified as an input for the SEA comprehensive planning unit or is referred to other subdivisions of the SEA, planning should be sensitive to the type of problem under consideration so that the functions, processes, and techniques of the planning undertaken will be pertinent to the nature of the problem.

COMPREHENSIVE PLANNING FOR THE MAJOR DECISION-MAKING LEVELS

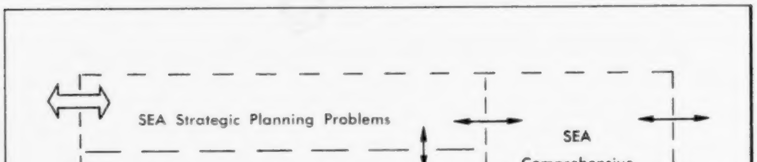
As defined in the introductory section, comprehensive planning focuses upon the provision of solution oriented information which deals with problem inputs provided by SEA policy and administrative decision makers. The nature of planning functions, processes, and techniques will vary as the nature of the problem input varies. As pointed out in Anthony's analysis of problem input types,[1] any problem which can occur in the total range of SEA decision making may be included in one of the following categories:

1. Strategic planning problems
2. Management control problems
3. Operational control problems

Decision makers are ultimately responsible to the real world environment (RWE) for the consequences of their decisions. The degree of this responsibility to the RWE increases in direct ratio with the level of decisions that are being made ranging from operational control decisions at the lower end, to strategic plan-

FIGURE No 3

Interdependency of SEA Problems and Comprehensive Planning Within the Real World Environment


SEA Strategic Planning Problems
SEA Management Control Problems
SEA Operational Control Problems
SEA Comprehensive Planning
Real World Environment

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[1] Robert N. Anthony, **Planning and Control Systems, A Framework for Analysis.** Boston: Harvard University, 1965.

ning decisions at the upper end of the continuum. Figure 3 indicates how SEA problem categories and comprehensive planning may be pictured to show mutual inerdependency within the RWE.

STRATEGIC PLANNING PROBLEMS

The Comprehensive Planning Function

Strategic planning problems in the SEA originate primarily from the need for identifying worthy goals of education and the policies which may be formulated as a result. In a democracy, the worthiness of educational goals and derived policies is determined by their impact upon and acceptance by society, i.e., the real world environment. Traditionally, strategic planning information has been difficult to obtain with validity because of the highly complex nature of the American society and the voluminous, often scrambled demands emanating from the socio-psychologic needs of individuals in the society, and the ethnic, social, economic, and political sub-stratifications of society in which individuals at times group and regroup themselves.

The function of comprehensive planning at the strategic planning problem level is maintaining integrity with the real world environment. This function may be expressed as the conditional statement:

$$\mathbf{D_r = G_w \Rightarrow I_r = V\,[G_w(RWE)]}$$

Interpretation. If a decision is required (D_r) which must identify worthy goals (G_w) for the SEA to adopt, then the information required (I_r) by the decision maker must be valid (V) in terms of the effects of such goals upon the real world environment (RWE).

$D_r = G_w$ is the responsibility of decision making. $I_r = V[G_w(RWE)]$ is the responsibility of comprehensive planning. I_r being equivalent to synthesized planning solutions and $V[G_w(RWE)]$ being equivalent to estimated consequences of solution implementation. $G_w = I_r \Rightarrow V[G_w(RWE)]$ delineates the scope within which the planning process must operate.

It should be noted at this point that specific G_w's for education may be derived from the RWE for the present, for the near and anticipated future, or for the relatively distant future. The planning process at this level of problem solving will be oriented not only to identifying such RWE desires as short range, intermediate range, and long range G_W's, but, in addition, will provide information relative to RWE priority values of G_W's within each of these time range categories. It therefore would be quite legitimate for planning at this level to process problem inputs directed to the identification of short range, or intermediate range, or long range G_W's.

COMPREHENSIVE PLANNING PROCESS AND TECHNIQUES

The planning process at this level stems from a systems research approach which, broadly stated, consists of:

1) identifying and projecting educational needs.

2) clarifying and quantifying educational objectives.

3) delineating alternative uses of resources to attain objectives.

4) estimating potential effectiveness and efficiency of each alternative.

5) integrating all functions of the educational system into an internally consistent plan of action, and

6) recommending an optimum plan for administrative action.

However, to be effective, this process cannot depend upon the armchair deductions or assumptions made by planners. The conditional statement of the planning function specifies the manner in which systems analysis should be executed. That is to say, the main focus of the SEA planning process at the strategic planning problem level is derived from the G_W term of the functions statement, i.e., to what extent can it be demonstrated that existing or projected specific goals, policies, and objectives of the educational system are relevant to the persistent and compelling social, cultural, and economic problems of the state?

The degree to which this focus can be maintained by the planning process, indicated by the terms $I_r = V|G_W(RWE)|$, will be dependent upon the ability of planners to maintain sensitivity to the perception of problems and to estimate RWE reaction to solution oriented information in the form of alternative solution consequences. The techniques for implementing the planning process at this level should involve elements of the RWE in two-way communications concerning:

1) the generation of alternative possible goals.

2) explanation of possible alternative goals and related data.

3) public dialogue concerning the alternative goals, methods/means strategies to achieve them, and the possible consequences of each strategy.

4) public participation in the selection of desired goals and acceptance of strategies to achieve them.

5) a feedback validity looping network to ascertain goal attainment and signal the need for corrective measures to be taken in time to affect desired outcomes.

The information derived from this technique constitutes the primary source of data inputs for the planning process at the strategic planning problem level.

The elements of the RWE selected should be as broadly representative of the public as possible, consistent with the specific nature of the strategic planning problem, whether that problem be stated in the form of worthy goals, policies, objectives or otherwise.

A partial listing of RWE elements which operate in the political, social and economic spheres in Iowa, identified as a result of a study conducted by the project included such diverse groups as the U.S. Department of Agriculture, the Commission for the Blind, the Iowa Development Commission, the Iowa Farm Bureau, and the Iowa Association for Mental Health. A more complete listing is included in Appendix D.

ESTIMATING CONSEQUENCES OF ALTERNATIVE SOLUTION ORIENTED INFORMATION

Prior to decision-making. A number of alternative Gw's may be trial-tested in the RWE communication network to ascertain the kind and degree of RWE reaction for each. The testing methods may take any of a number of forms chosen for appropriateness by conditions at the time of test, and for the information required. More than twenty such testing methods are reported by P. E. Rosove.[1] Since this survey is not as yet cleared for open publication, suffice it to say that the methods reported may be utilized for a number of purposes ranging from monitoring noise produced in the general RWE system as a result of reaction to alternative G_W information, to the establishment of structured validity feedback loops with a representative sample of elements within the RWE. This latter utilization would require weighted evaluations to be made for a number of alternative Gw's.

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[1] **A Provisional Survey and Evaluation of the Current Forecasting State of the Art for Possible Contributions to Long-range Educational Policy Making.** Tech Memo 364/000/00, a document produced in performance of contract OEC-1-7-071003-4275, Department of Health, Education and Welfare Office of Education, by Systems Development Corporation, Santa Monica, California, August, 1967.

Following Decision Making. 1) The actual reaction of the RWE system may be assessed and compared to intelligence gathered during the pre-decision making period. This would indicate the degree of accuracy which might be anticipated at future times for the method(s) of estimating consequences utilized in the planning process.

2) Quantitative or qualitative worthiness of goals resulting from decision making may be evaluated in terms of attainment of the pre-specified desires of the RWE. This may provide the basis for developing a yardstick for measuring educational quality.

3) Decisions for strategic planning problems based upon information developed within this planning process will stand a greater chance of being formulated with:

a) an understanding of the level of cooperation or opposition to be anticipated from elements within the RWE system and,

b) an understanding of the degree of priority (anticipated pressure) from elements within the RWE for the attainment of specific goals.

MANAGEMENT CONTROL PROBLEMS

The Comprehensive Planning Function

Given relevant goals to pursue, the problems which confront decision makers at the SEA management level center upon the extent to which these goals can be attained. The major function of comprehensive educational planning at this problem leve is to provide alternative solution oriented information to aid SEA administrators in making decisions relating to management strategies. Such strategies will involve the programming, implementation, and control of activities required for goal attainment withi the existing or anticipated constraints of SEA resource, time and performance capacities.

The function of comprehensive planning at the managemen control problem level is one of supporting decision makers in th formulation of management strategies for goal attainment withi imposed constraints of resources, time and performance. Thi function may be expressed as the conditional statement:

$$D_r = A_{G_w} \Rightarrow I_r = E_{PIC} \left[\frac{\underline{(RTP)}}{Sm} \right]$$

Interpretation. If a decision is required (D_r) which must attai worthy goals that have been identified (A_{G_w}), then the informa tion required (I_r) by the decision maker must be in terms of how SEA management strategy for goal attainment (S_m) can most efficiently program, implement and control (E_{PIC}) the utilization of available resources, time and performance (RTP). The relationship of S_m to the RTP is expressed as a fraction. The better S_m's are formulated to operate within the limitations of available RTP, the more efficient will be the attainment of goals. It should be noted that the conditions of RTP are not constant. This implies that S_m's must be capable of changing as RTP conditions change. Therefore, planning at this level should be a continuous process directed to the provision of up-to-date solution oriented information and not fixed information which is at times reported in the form of long-range plans.

COMPREHENSIVE PLANNING PROCESS AND TECHNIQUES

Some aspects of planning to support the development of management strategies are similar to the development of information at the strategic planning problem level. This is an essential overlap and insures that information provided to support management strategy development will be consistent with the goals and policies of the SEA that were derived from the RWE. Therefore, the planning process at the management control problem level will focus upon:

1) identifying and projecting educational needs within the goals for education established by the SEA;

2) deriving preliminary management strategies by clarifying and quantifying educational objectives leading to SEA goal attainment and by identifying functions and tasks necessary to attain objectives;

3) delineating alternative methods and the means for operationalizing each in the form of resource, time, and performance requirements;

4) estimating potential effectiveness and efficiency of alternative management strategies by techniques ranging from field tests or pilot studies for some management control problems to the establishment of validity feedback loops with SEA and RWE elements for other types of management control problems;

5) integrating all related functions of the educational system into an internally consistent plan of action that would be recommended as an optimum plan for the decision maker to implement; and

6) based upon the decision maker's choice regarding the plan of action to be taken, providing the information for the estab-

lishment of management and control subsystems prerequisite to evaluating, and when necessary revising the plan of action as a result of monitoring the relationship of outcomes to goals.

The techniques of the comprehensive planning process at this problem level operate in the major areas of (1) securing valid data inputs relevant to objectives identified in management strategies leading to the attainment of SEA goals and, (2) developing an efficient intra-agency communication network which can provide both information and coordination to involved operating divisions of the SEA.

Sources of planning data inputs, in addition to elements of the RWE mentioned earlier, include:

Planning units of other agencies or branches of State Government, e.g.,

- —the Governor's Office for Planning and Programming
- —the Comprehensive Planning Unit of the State Department of Health

Projects producing specialized educational data, e.g.,

- —the Midwestern States Educational Information Project
- —the Great Plains Project for Local School District Organization
- —the Elementary-Secondary Study of Education in Iowa
- —the State-Wide Plan for Vocational Rehabilitation Services in Iowa
- —the network of regional education laboratories now operating across the nation (Upper Midwest Regional Education Laboratory, etc.)
- —the National Center for Educational Statistics

Technical planning units of other state or regional education agencies.

Use of Special Models. A special area of focus which may require solution oriented information from the SEA comprehensive planning unit at this problem level is sensitizing the political and administrative processes underlying the educational system to needs suggested by the identification of desired educational goals. This type of solution oriented information may deal with problems encountered in the state legislative program, particularly its policy enactments and funding programs, as well as the executive action programs, both at state and local levels. A planning model to indicate how such solution oriented information may be generated is reported in Appendix F. The model makes use of the communication networks established between the SEA and RWE to relate data inputs in the form of information from the RWE to the identification of the kind of management strategies leading to SEA goals.

Estimating Consequences of Alternative Solution Oriented Information

Prior to Decision Making. A number of S_m's may be tested in the RWE, as well as with SEA decision makers who operate at the strategic planning problem level, to indicate the relative degree of acceptance for each. The same logic and methods for "testing" G_w's may be used in "testing" S_m's.

Following Decision Making 1) The actual reaction of elements within the RWE system and of strategic planning decision makers in the SEA may be assessed and compared to intelligence gathered during the pre-decision making period. This would indicate the degree of accuracy which might be anticipated at future times for the methods of estimating consequences utilized in the planning process.

2) Outcomes of decisions based upon information produced in the comprehensive planning process at this level can be evaluated to determine if they are consistent with need. The degree to which goal oriented objectives have been attained in terms pre-specified by elements within the RWE and SEA can also be ascertained.

OPERATIONAL CONTROL PROBLEMS

Comprehensive Planning Function

Given relevant management strategies for goal attainment within identified constraints of resources, time, and performance, problems at the operational control level focus upon the question: To what extent can the educational system be efficient while achieving the principle objectives? To what extent are resources used optimumly? To what extent are individual pupils benefiting from educational programs, services, and organization?

The function of comprehensive planning at the operational control problem level is one of supporting decision makers with information required to maintain ongoing activities within constraints imposed at the management control and strategic planning levels. This function may be expressed as the conditional statement:

$$D_r = A_{Sm} \Rightarrow I_r = T_o [(F_{rtp}) (R) (A)]$$

Interpretation. If a decision is required (D_r) which must specify SEA activities leading to the attainment of management strategies (A_{Sm}), then the information required (I_r) by the decision maker must be tactically operational (to) in terms of the following three factors: feasibility – the basic components of which are resources, time, and performance (F_{rtp}), responsibility (R), and authority (A).

When it is necessary to involve a number of operational divisions of the SEA to implement a management strategy, the (R) and (A) factors may be complex. If the nature of this complexity causes confusion, it may seriously affect the (F_{rtp}) factor. The responsibility and authority to allocate resources and prescribe time and performance are essential to carrying out operations. It is for this reason that each of the three factors are equally weighted in the statement of conditions affecting the information required by the decision maker.

COMPREHENSIVE PLANNING PROCESS AND TECHNIQUES

One of the major purposes of comprehensive educational planning in the SEA is to provide operational control information to administrators in charge of supervising the day-to-day SEA activities designed to achieve objectives in keeping with management strategies for SEA goal attainment.

There are two ways a planning unit may accomplish its purpose in this area. The first is to provide in-service training in planning techniques for SEA operational control administrators. Such techniques would focus upon: a) developing systems analysis expertise, for the purpose of clarifying SEA policies and management strategies and deriving administrative authority and responsibility therefrom and, b) developing expertise in techniques relating to the management of personnel performance, resources, and time in operations directed to the attainment of objectives.

A second way in which a planning unit may accomplish its purpose in this area is to help administrators develop complex systems analyses and identify methods/means analyses in terms of performance, time and resources for the units of work involved. In this instance, the planning unit's role would be to provide the expertise in the planning process technique. It would draw on the expertise of involved SEA personnel for knowledge of tactical requirements as a main source of data inputs. Appendix E depicts the procedures followed by the project unit in preparing to implement this function.

ESTIMATING CONSEQUENCES OF ALTERNATIVE SOLUTION ORIENTED INFORMATION

Prior to Decision Making. The utilization of the systems approach in providing solution oriented information at the strategic planning problem and management control problem levels of decision making provides the data inputs necessary to obtaining information relating to the following:

1) the identification of anticipated desired outcomes, to help insure that the operational activities are consistent with the goals of the SEA.

2) the identification of objectives, to help insure that operational activities are consistent with SEA management strategies

3) the identification of tactical operational activities related to 1) and 2) above, and administrative responsibility and authority for each.

These in turn provide the necessary data inputs for developing administrative operational control tools, such as PERT networks, to help focus upon decisions which have to be made to control and direct the expenditure of resources, performance, and time during the conduct of operational activities.

Following Decision Making. The pattern and structure of activities may be analyzed in a number of ways:

1) pre-decision performance criteria may be compared with demonstrated performance by those engaged in SEA activities,

2) the extent to which identified objectives were achieved may be determined.

3) the extent to which identified management strategies were fulfilled may be determined.

4) SEA goal attainment may be determined through an assessment of RWE behavorial changes which would indicate the extent to which a needs-satisfaction of elements in the RWE was accomplished.

CONTROL

The comprehensive planning process at the strategic, management, and operational problem levels as outlined in this chapter can be utilized by a comprehensive planning unit as a powerful and effective tool to provide SEA decision makers with the means to achieve SEA ends. As a process at the management and operational levels it can be utilized effectively whatever the SEA's goals. Therefore, to help insure that the ends to which this planning process is directed remain in the public interest, it is important that appropriate controls be instituted.

We believe planning process control may best be achieved if the role of the SEA planning unit is divorced from SEA decision making. The role of the planning unit should be limited to providing valid information for use by decision makers who must assume responsibility for the decisions which they make. Establishing an SEA organizational structure by which SEA decision makers' problem inputs may be screened for appropriateness prior to submission to a planning unit is a desirable means for implementing control. In addition to safeguarding the RWE from a possible condition in which the means are not justified by ends or goals, it forces the establishment of intra-SEA communication networks for channeling solution-oriented information through the policy, management, and operations levels of SEA decision making. Establishing such an SEA organizational structure for planning is the focus of the following chapter.

CHAPTER 3

Structure for Planning

The place of a planning unit within the SEA organizational structure, as well as the organizational structure of the unit, may either limit or enhance its ability to function in the provision of solution oriented information for the full range of problems which may be directed to it. From the description of the planning functions, processes, and techniques in the preceding chapter, it will be noted that the information produced by a planning unit will go to SEA decision makers serving in line or staff positions. In order to operate in such a fashion, with the required degree of flexibility and authority, the personnel within the planning unit should hold staff positions.

This chapter will explore how the present SEA organizational structure and the place of the present planning unit in it (See Fig. 1) may be utilized in the channeling of problems and the identification of problem level, to provide a basis for designating priority for individual problem inputs.

UTILIZING THE SEA STRUCTURE FOR PLANNING

The first step in channeling a problem input to the planning unit is the desire of a decision maker to do so. The organization charts in Figure 1 and as further exemplified in Figure 4 indicating SEA line of authority depict channels for submitting problem inputs to the planning unit. Such channels, if utilized by all operating divisions of the SEA, will insure that:

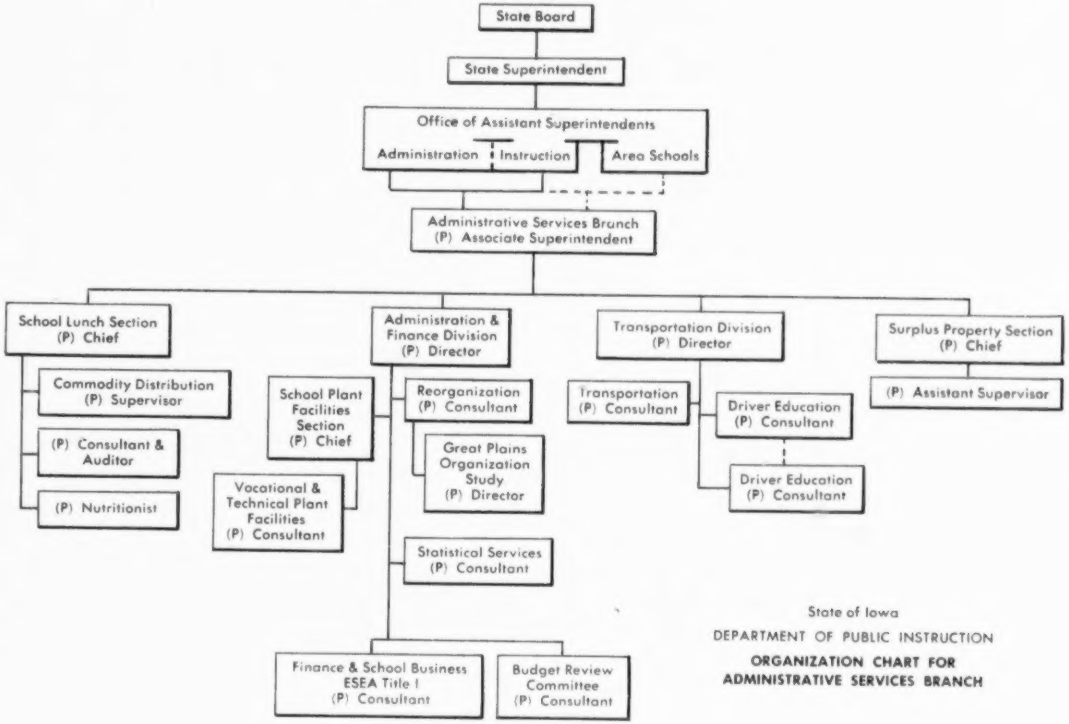
1) identification of and communication concerning specific problems takes place between the operation, management, and policy levels of SEA administrators,

2) the initial decision to submit a problem to the planning unit takes place at the closest point in the organization where the problem occurs, and

3) the decision to submit a problem input to the planning unit is screened and controlled by the existing hierarchy of SEA administrators, which may redesignate it to what may be considered to be an appropriate problem input level, regardless of its level of origin.

FIGURE 4

ORGANIZATIONAL STRUCTURE
DEPARTMENT OF PUBLIC INSTRUCTION
ADMINISTRATIVE SERVICES BRANCH

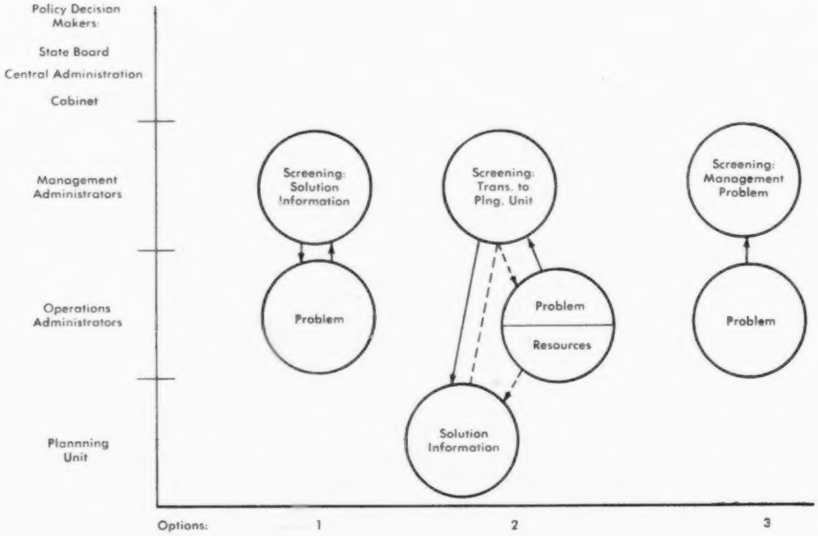

State Board
State Superintendent
Office of Assistant Superintendents
Administration
Instruction
Area Schools
Administrative Services Brunch (P) Associate Superintendent
School Lunch Section (P) Chief
Commodity Distribution (P) Supervisor
(P) Consultant & Auditor
(P) Nutritionist
Administration & Finance Division (P) Director
School Plant Facilities Section (P) Chief
Vocational & Technical Plant Facilities (P) Consultant
Reorganization (P) Consultant
Great Plains Organization Study (P) Director
Statistical Services (P) Consultant
Finance & School Business ESEA Title I (P) Consultant
Budget Review Committee (P) Consultant
Transportation Division (P) Director
Transportation (P) Consultant
Driver Education (P) Consultant
Driver Education (P) Consultant
Surplus Property Section (P) Chief
(P) Assistant Supervisor
State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
ORGANIZATION CHART FOR ADMINISTRATIVE SERVICES BRANCH

Operational problem inputs, which may originate from line positions shown in Fig. 4, would be first submitted to management level administrators indicated by the associate superintendent positions in Fig. 1. A number of options are available to the associate superintendent as indicated in Fig. 5.. One, he may supply the required solution oriented information and refer the problem and solution back to its origin. Two, he may wish to transmit the problem to the comprehensive planning unit, add information in the form of his perceptions to the initial problem input, specify individuals within the operational division with whom members of the planning unit may work in developing solution oriented information, and specify the channels for the return of planning unit solution oriented information. Three, he may see the problem input as an element of a larger problem, perhaps operating on the management control level.

Management problems which might be considered as inputs for a planning unit would first be submitted for screening to the cabinet. In the Iowa SEA, the cabinet is composed of all associate superintendents and the three assistant superintendents. The role of the cabinet is twofold. First it acts as a policy making group for the management and operational organization levels

FIGURE 5

CHANNELING PROBLEM INPUTS ORIGINATING AT THE OPERATIONAL CONTROL PROBLEM LEVEL

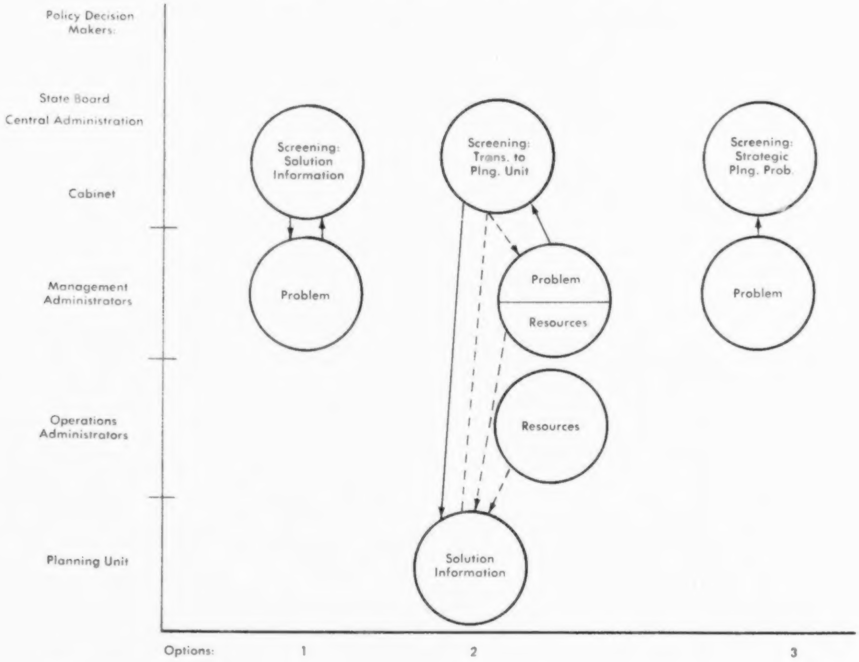

Policy Decision Makers:
State Board
Central Administration
Cabinet
Management Administrators
Operations Administrators
Plannning Unit
Screening: Solution Information
Problem
Screening: Trans. to Plng. Unit
Problem
Resources
Solution Information
Screening: Management Problem
Problem
Options:
1
2
3

of the SEA; policies are implemented through the Office of Assistant Superintendents. Second, it serves as an advisory group to the state superintendent for strategic planning problems.[1] The cabinet may exercise a number of screening options as depicted in Fig. 6. One, it may supply the required solution oriented information and refer the problem with its solution back to its origin. Two, it may wish to transmit the problem to the comprehensive planning unit, add information in the form of its perceptions to the initial problem input, specify individuals or task force groups with whom members of the planning unit may work in developing solution oriented information, and specify the channels for the return of the planning unit solution oriented information. Three, it may see the problem input as an element of a larger problem, perhaps operating at the strategic planning problem level.

Strategic planning problems which might be considered as inputs for the planning unit may originate in the SEA cabinet,

FIGURE 6

CHANNELING PROBLEM INPUTS ORIGINATING AT THE MANAGEMENT CONTROL PROBLEM LEVEL



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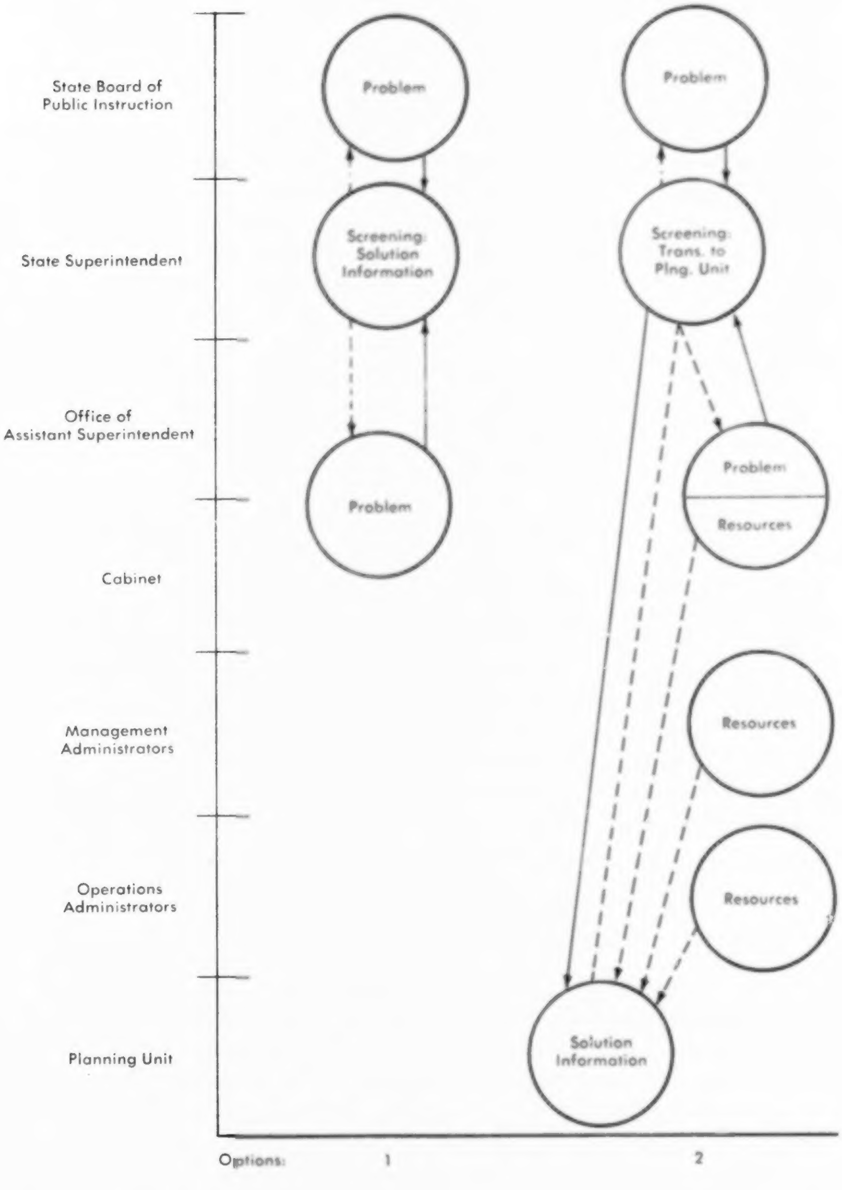
[1] Minutes of the Meeting of the State Board of Public Instruction, April 22, 23, 1965.

FIGURE 7

CHANNELING PROBLEM INPUTS ORIGINATING AT THE STRATEGIC PLANNING PROBLEM LEVEL


State Board of Public Instruction
State Superintendent
Office of Assistant Superintendent
Cabinet
Management Administrators
Operations Administrators
Planning Unit
Problem
Screening: Solution Information
Problem
Problem
Screening: Trans. to Plng. Unit
Problem
Resources
Resources
Resources
Solution Information
Options:
1
2

in the Office of Assistant Superintendents, or with the State Superintendent as a result of needs perceived by himself or by the State Board of Public Instruction. Strategic planning problem inputs originating in the cabinet, Office of Assistant Superintendents, or State Board of Public Instruction would first be submitted for screening to the State Superintendent. A number of options are available to the Superintendent as indicated in Fig. 7. One, he may supply the required solution oriented information and refer the problem and solution back to its origin. Two, he may wish to transmit the problem to the comprehensive planning unit, add information in the form of his perceptions to the initial problem input, specify individuals within the SEA with whom members of the planning unit may work in developing solution oriented information, provide information concerning elements of the RWE which are perceived to be involved in the problem, and specify channels for the return of solution-oriented information.

This method of channeling problem inputs to the planning unit utilizes the existing SEA structure to identify each problem, assign its problem level, and specify the channels for the return of solution oriented information. It also makes use of the existing SEA structure to assign priority to the problem inputs should the work load of the planning unit exceed its available resources. If this situation develops, top priority will be given to strategic planning problem inputs, then to management control problem inputs, and lastly to operational control problem inputs. Although this procedure requires the SEA planning unit to be under the direct administrative purview of the state superintendent, it also insures that the planning unit will be sufficiently divorced from decision making so as not to pose a real or asssumed threat to the SEA operating divisions. As Eide points out, "This may be worthwhile noting for those who fear that in the future, overambitious planners will gain too much control of policy matters." [1]

ORGANIZATIONAL STRUCTURE OF THE PLANNING UNIT

Fig. 8 depicts the present organization of the SEA Planning, Development, and Evaluation unit and its line of authority in the SEA Central Administrative structure. This position of the unit is ideal for maintaining a staff function in the provision of solution oriented information through the channels described earlier.

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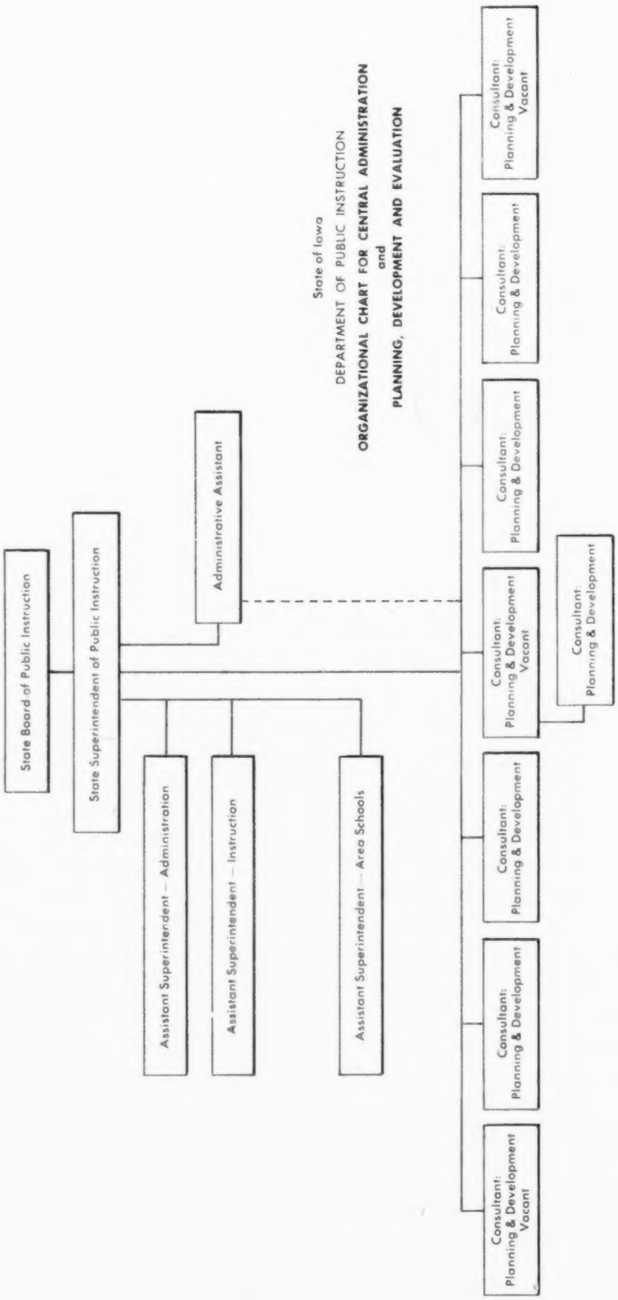
[1] Kjell Eide, **The Planning Process,** Phi Delta Kappa, Symposium on Educational Planning, University of Minnesota, November, 1967.

FIGURE 8

ORGANIZATIONAL STRUCTURE: SEA PLANNING, DEVELOPMENT, AND EVALUATION UNIT


State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
ORGANIZATIONAL CHART FOR CENTRAL ADMINISTRATION
and
PLANNING, DEVELOPMENT AND EVALUATION
State Board of Public Instruction
State Superintendent of Public Instruction
Administrative Assistant
Assistant Superintendent — Administration
Assistant Superintendent — Instruction
Assistant Superintendent — Area Schools
Consultant: Planning & Development Vacant
Consultant: Planning & Development
Consultant: Planning & Development
Consultant: Planning & Development Vacant
Consultant: Planning & Development
Consultant: Planning & Development
Consultant: Planning & Development
Consultant: Planning & Development Vacant

However, as noted in the introductory section, the personnel of this unit presently operate within the scope of specific problems assigned to each by the superintendent. The present unit structure and manner in which problems are assigned makes coordination of unit personnel an informal activity, often absent. As a result, the efficient utilization of planning personnel, with regard to the total number and range of problems which can be processed, the depth and detail of information which can be provided, and planning directed to the overall goals of the SEA, suffers.

To implement the concepts formulated in the course of this study, we believe minor modifications in the organizational structure of the present planning unit are necessary.

SUGGESTED MODIFICATIONS

1) The present Planning, Development, and Evaluation unit should be renamed to make clear in the name that the services provided by the unit are informational in nature, and not the operation of educational programs as may be now asssumed from the term *Development* in the present title. Also the name given to the unit should indicate both the major types of informational services it can provide for any problem input directed to it and its special staff status in the SEA organization. A suggested name for the unit is ***Research, Planning, and Evaluation Information Bureau.***

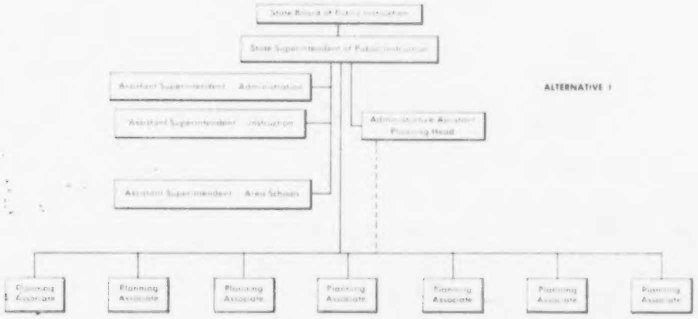
2) The individual professional staff positions of the unit should be renamed from the present *Consultant,* which does not connote staff function, to *Planning Associate,* which will.

3) The present line of authority between each of the professional members in the planning unit and the state superintendent should be maintained to insure open and accessible channels of communication. However, one member of the planning unit or the Administrative Assistant should be given the responsibility and attendant authority to coordinate the overall operation of the unit (See Fig. 8a and 8b). It is suggested that the title *Planning Head* be given to this individual which will designate this responsibility but will not detract from the equal staff status of the other members of the unit, since *Planning Associate* implies equal general status within the unit structure. Both titles, *Planning Head* and *Planning Associate,* are sufficiently distinct from the existing titles of personnel within the SEA to insure that no confusion is created which may indicate that the nature of these positions are related to program operations.

4) Each professional staff member of the unit should receive an intensive training program in systems approaches to

FIGURE 8a

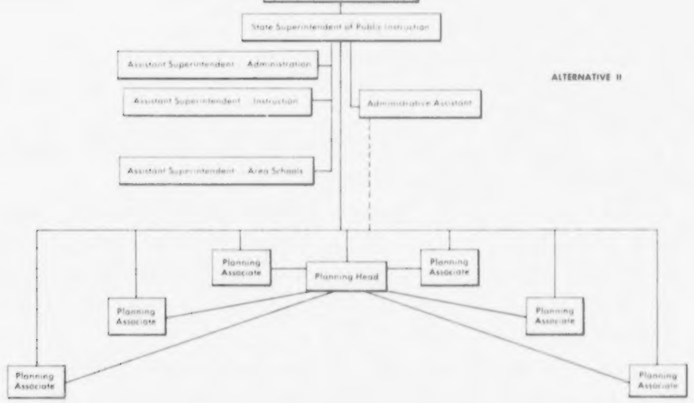
PROPOSED ORGANIZATIONAL STRUCTURE
RESEARCH, PLANNING, AND EVALUATION
INFORMATION BUREAU


State Board of Public Instruction
State Superintendent of Public Instruction
Assistant Superintendent — Administration
Assistant Superintendent — Instruction
Assistant Superintendent — Area Schools
Administrative Assistant
Planning Head
ALTERNATIVE I
Planning Associate
Planning Associate
Planning Associate
Planning Associate
Planning Associate
Planning Associate
Planning Associate

planning. In addition, each member should have competence in a specialized professional discipline which is basic to the overall function of the unit.

FIGURE 8b

PROPOSED ORGANIZATIONAL STRUCTURE
RESEARCH, PLANNING, AND EVALUATION
INFORMATION BUREAU


State Board of Public Instruction
State Superintendent of Public Instruction
Assistant Superintendent — Administration
Assistant Superintendent — Instruction
Assistant Superintendent — Area Schools
Administrative Assistant
ALTERNATIVE II
Planning Associate
Planning Head
Planning Associate
Planning Associate
Planning Associate
Planning Associate
Planning Associate

> "The orientation of the planning staff, however, should not primarily be towards their respective professions, but focused upon the actual problems to be faced by educational administration. Staff members should be taught to regard themselves as educational planners with a certain professional bias, rather than professionals who happen to be concerned with educational planning." [1]

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[1] Kjell Eide, **The Planning Process**, p. 15.

CHAPTER 4

Staff Development

PLANNING UNIT STAFF COMPETENCIES

To specify the staff competencies for comprehensive planning requisite to a capacity for focusing upon any potential problem input would require the description of professional training and skills of the entire SEA professional staff and a wide range of research agencies whose services at times might have to be contracted. The preceding chapter dealing with SEA organization for planning indicates how the resources of SEA personnel may be allocated for a given problem input. The staff competencies of the planning unit personnel should be such as to best make use of SEA resources in the development of problem solutions for SEA decision makers. The competencies required to support the overall planning effort in a planning unit with eight professional positions (Figure 8a or 8b) should be as follows:

1) one member to be expert in educational administration, supervision, and coordination skills with ability to:

a) provide liaison for the planning unit with state planning and other agencies that may be involved in unit activities related to a given problem

b) coordinate the effort of all planning staff members working on specific problem inputs

c) maintain an ongoing record of the problem inputs and planning unit resources committed to each, so that up-to-date information may be available for the reassignment of priority for problem inputs should the resources of the planning unit become critical

2) one member to be expert in educational research design and systems engineering who will provide direction for the unit's activities in systems analysis, systems synthesis, and preparation of management tools such a PERT and CPM networks

3) one member to be expert in communications techniques such as:

a) developing communication networks throughout the SEA and with elements of the RWE.

b) perceiving and analyzing the significance of information received from environmental elements for the purpose of validating problem input data (See Appendix B and C.)

c) developing effective public information materials

d) conducting in-service training programs

4) one member to be expert in the knowledge of and interpretation of laws which focus upon educational parameters

5) one member to be knowledgable in the philosophy of education as relates to social, political, and economic needs of society and who is expert in techniques for researching and retrieving a wide variety of required educational data and information from sources within and outside of the SEA.

6) one member to be expert in the knowledge of elementary, secondary, and post secondary curriculum including how to effect curriculum change both at the institutional level and at the contact level of teaching – learning

7) one member to be expert in descriptive and inferential statistical techniques, procedures, and data handling, including electronic data processing techniques

8) one member to be expert in the preparation of applications for the full range of federal and private sources of funds for the development of educational programs and projects at both the SEA and local educational agencies level of application.

IN-SERVICE TRAINING IN PLANNING

As stated earlier in this report, in-service training in planning within the SEA is itself a planning technique utilized by a planning unit and oriented to efficiency of agency operations, establishing SEA in-house communications networks based upon common referents in technical language and concepts, and reducing the overall number of problems directed to the planning unit, allowing it to concentrate upon complex priority problems. In-service training in planning within the SEA should be an ongoing activity and should be a major segment of the SEA orientation program for new professional staff members.

Providing educational leadership to schools is the most recurring function identfied by each of the operating divisions of the SEA, as ascertained from an inspection of *Proposed Departmental Activities and Goals*. Leadership function statements have been found to be prominent in SEA publications in our review of materials dating back to the 1963-64 school year. Developing leadership capability can be, therefore, legitimately added to the list of reasons for providing in-service training in the planning process to professional staff members of the SEA. Ways in which the planning process support the leadership role are identified in detail by Sheriff and West.

The general characteristics of effective leadership, as reported by Sheriff[1] operate on three levels, i.e., technical skills (operational control problems), human skills (management control problems), and conceptual skills (strategic planning problems). When professional staff members are recruited from the field, or promoted from within the ranks of the SEA to a more complex leadership role, one of the personal difficulties encountered is the necessity to discontinue certain skills to which they are accustomed and to develop those skills incumbent in their new leadership positions. Sheriff[1] identifies six general characteristics of effective leadership: intelligence, communication ability, broad and well rounded interests, problem solving and decision making, mental and emotional maturity, and a healthy human relations attitude. If intelligence is defined as a parameter of quality concerning behavior in specific instances, if mental and emotional maturity can be measured by the degree to which an individual understands himself and is able to delegate responsibility to others, and if a healthy human relations attitude is governed by an individual's ability to understand others, then in-service training in planning as a process will enhance all six of the leadership characteristics identified by Sheriff.

West[2], in describing approaches to leadership, indicates that the five functions in which management should engage are planning, organizing, motivating, controlling, and developing management abilities of subordinates. He goes on to specify that the essential characteristics of leadership necessary to carry out these functions are:

1) Leader must make good decisions
  a) he thinks through the problem
  b) he foresees possible obstacles and ways of overcoming them

---

[1] Don R. Sheriff, Associate Professor and Director, Center for Labor and Management, College of Business Administration, University of Iowa, **Leadership and Human Behavior in the World of Work**, an address to the personnel of the Department of Public Instruction, Des Moines, Iowa, January 8, 1968.

[1] Don R. Sheriff, **Leadership and Human Behavior in the World of Work.**

[2] Jude T. West, Associate Director, Center for Labor and Management, College of Business Administration, University of Iowa, **Approaches to Leadership**, an address to the personnel of the Department of Public Instruction, Des Moines, Iowa, January 8, 1968.

    - c) he gets the facts
- 2) Leader must motivate
    - a) he must perceive the needs of his people
- 3) Leader always has the situation under control
    - a) planning in advance
    - b) checks work against standard
    - c) asks for reports on certain milestones of the program
        - i) what is most serious
        - ii) what is most probable
        - iii) what is invisible
- 4) Leader assumes responsibility
    - a) more than not passing the buck
    - b) acceptance of additional responsibility
    - c) leader who is not respected is not a leader
- 5) Leader gives everyone a square deal
    - a) he doesn't make promises he cannot keep
    - b) he does not exploit the willing worker
    - c) he does not let others lie down on the job
    - d) he does not put his colleagues on the spot
- 6) Leader inspires confidence. How earned?
    - a) by managing his job
    - b) showing concerns for the needs of his people
    - c) helping them when difficulties arise
    - d) by defending them

There are a number of ways in which in-service training may take place. Two possibilities follow:

SPECIALIZED IN-SERVICE TRAINING PROGRAM

First, a specialized training program focusing on the planning process may be undertaken as an in-house SEA activity or as an out-of-house activity to provide training to personnel employed in other levels of school organization within the state. Such a specialized training program could include the following areas:

- A) Introduction to Network Based Management Systems
    - 1) Nature and Functions of Management
    - 2) Management Process
    - 3) Program/Project Management

- B) Nature of Management Systems
  - 1) Project Planning and Control Steps
  - 2) Project Definition Phase
- C) Network Construction
  - 1) Time Estimation
  - 2) Scheduling/Resource Allocation
- D) Organization and Implementation

ORIENTATION IN-SERVICE TRAINING PROGRAM

Second, an orientation type of program, which would be broader in scope, containing elements of the planning process as integral portions of program topics, could be conducted periodically for new SEA professional personnel and for invited personnel from other levels of school organization within the state. The outline for this type of program might vary from time to time, however, in general would include the following areas:[1]

- A) The challenge of public service
  - 1) public's image of state employees
  - 2) state employees image of self
  - 3) challenge of change
- B) Management and organization
  - 1) organization and objectives of the SEA
  - 2) the professional employee's part in achieving organizational objectives
  - 3) functional organization of the state
  - 4) line and staff organization of the SEA
  - 5) changing concepts of management, operation and organization systems
- C) Communications
  - 1) characteristics of effective communications
  - 2) barriers to communications
  - 3) the work climate and communications
  - 4) giving assignments for action
  - 5) communication channels and coordination
- D) Leadership skills
  - 1) motivation and leadership

---

[1] Adapted from Management Development Program, as received from Dr. Sydney M. Grobman, Director, Office of Career Development, Commonwealth of Pennsylvania, Department of Public Instruction, Harrisburg, June, 1968.

- 2) methods of providing effective managerial leadership
  - a) management skills
    - i) planning process
    - ii) organizing: structure, procedure, resources, and fundamentals of organization
    - iii) coordination: purpose, techniques, operations, and information
    - iv) directing: changing procedures as needed
    - v) controlling: management by objectives, use of tools such as PERT, CPM, and other networks.
- 3) management systems
  - a) application of electronic data equipment to SEA operations
  - b) current budgeting system: impact of federal government on objectives
  - c) Planning, Programming, Budgeting, Systems (PPBS)

E) Performance standards and evaluation
- 1) purpose of performance standards and evaluation; motivation through performance evaluation
- 2) preparation and use of written performance standards
- 3) making the performance evaluation

These and other recommendations for implementing planning as heretofore described in this study will be considered in the following chapter.

CHAPTER 5

Recommendations

The special project staff during the past year has been engaged in a study directed to drafting and testing the ideas reported here for implementing a research planning, and evaluation information unit for the SEA. This report marks the close of Phase I of this endeavor. Phase II will be concerned with making the research, planning, and evaluation information unit an operational reality.

The need for initiating Phase II without delay stems directly from the simple fact that the world is changing—rapidly.

> "The nation's human, financial, and technological resources indicate that the economy has enormous promise for growth in the future. The United States, which is now producing goods and services at a rate of $750 billion a year, should be producing at a rate of at least $1 trillion a year in 1975. By that time the labor force is expected to be some 20% greater than it was in 1965, and its quality is expected to improve from year to year. Capital spending, now at a rate of $62 billion a year, is forecast at about $90 billion by the mid-1970's." [1]

Today we are trying to solve problems infinitely more complex than ever before. We are trying to understand the difficulties faced by emerging countries of which thirty years ago we had never even heard. We are struggling to deal with a deluge of facts, opinions, and other information from everywhere brought to us with a speed and in a volume that threatens to drown us all in words. We are trying to cope with a value system based on plenty rather than poverty, and an ethic increasingly oriented to leisure rather than work. And the change comes faster each year. It doesn't take an intensive amount of thought to realize that the demands we are making on our educational system are different and much greater than they were a few years ago. Our choices are painfully obvious.. We can let our educational system flounder in trying to adjust to the changing and increasing demands made upon it, or we can try to look ahead, figure out where we want to go and some of what is needed to get there, and set about getting it done.[1] In a sense, the entire contents of this report recommends a process for implementing comprehensive planning in the SEA. Implementing these recommendations by logically sequential steps that are consistent with the principles of change requires the perception of the obvious need to do so, a commitment to getting the job done which operates deeper than the oral level of agreement, and involvement on the part of all concerned which goes beyond conceptual activity, and results in direct and meaningful action.

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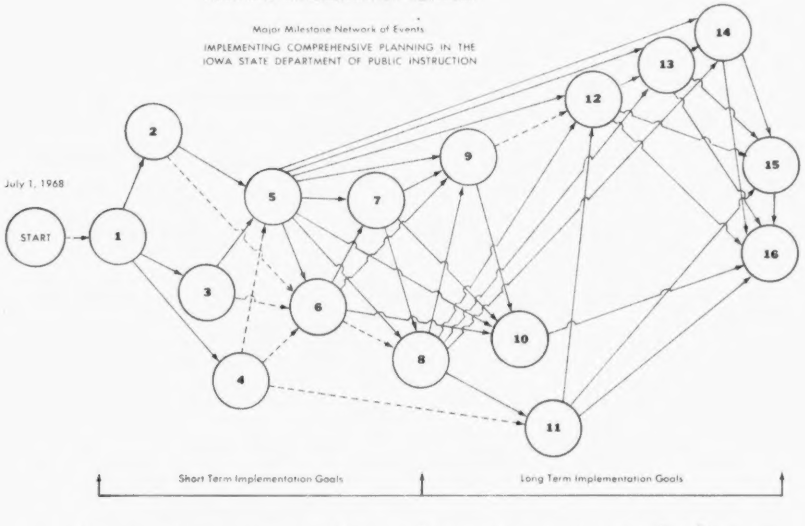
[1] **Growth Stocks**, a report published by the Securities Research Division, Merrill, Lynch, Pierce, Ferner, and Smith, Inc., New York, May, 1966, p. 1.

The following recommendations delineate the steps necessary for implementing an increased capacity for planning in the SEA (these recommendations are number-keyed to network events depicted in Fig. 9). We must begin to:

FIGURE 9

PLANNING IMPLEMENTATION NETWORK


Major Milestone Network of Events
IMPLEMENTING COMPREHENSIVE PLANNING IN THE IOWA STATE DEPARTMENT OF PUBLIC INSTRUCTION
July 1, 1968
START
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Short Term Implementation Goals
Long Term Implementation Goals

1) acquire resources for implementing activities leading to achievement of events in this network.

2) conduct in-service training in planning process techniques for SEA administrative and professional staff.

3) employ Planning Associates to fill present vacancies in the planning unit (priority for positions 2, 3, and 5; as described on pages 36-37 of this report).

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[1] Taken from an Address presented by Professor Don Wells, at the Educational Planning Conference, Iowa State University, Ames, Iowa, October 17, 1967.

4) disseminate the Comprehensive Planning Process Report to elements in the Iowa RWE (including SEA).

5) establish in-house planning communications network.

6) reorient and make available additional equipment to the Data Systems Division to meet the needed increase for information handling and retrieval capacity and capability.

7) provide data banks of information concerning time, performance, and cost of basic activities in which the SEA now engages.

8) initiate referral system of problem inputs to Research, Planning, and Evaluation Information Bureau.

9) provide electronic computer simulation programs for strategic planning purposes.

10) establish comprehensive Planning, Programming, Budgetting Systems (PPBS) for SEA.

11) establish efficient planning communication networks with elements in the RWE.

12) reidentify and project-in-time, Iowa educational goals.

13) identify comprehensive SEA management strategies for achieving educational goals.

14) initiate comprehensive SEA operations for attaining Iowa educational goals.

15) provide optimum SEA services and leadership to Iowa school systems.

16) achieve the maximum utilization possible of resources in the development of state educational programs.

Appendix A

Example of Validation Technique

(Validity Feedback Looping)

PROBLEM

The Iowa Project Staff of CPSEA is engaged in developing plans which will lead to the identification of a model relative to designing and implementing a state unit for Comprehensive Educational Planning.

The project staff is following a systems analysis approach in an effort to identify a model which the State Education Agency will be able to make operational in a state unit for comprehensive planning and which will provide this unit with information which will allow it to function in as comprehensive a manner as possible.

We are at a point in our systems analysis where it is necessary to identify the political, social, and economic environmental elements which affect educational planning. This is necessary so that we may *assess what expected goals such elements may have with regard to comprehensive planning for the state education program.* Also it will be necessary for the planning project to *determine strategic variables and anticipate probable influences of such elements* in order to design a model which is sensitive to the environment.

SOLUTION PROCESS:

We hope to engage a staff of experts to help in

1) identifying these environmental elements
2) analyzing possible strategic variables which these elements present individually and in combination in a system
3) identifying probable influences such elements may have on future comprehensive education planning activities in which the state education agency may engage.

We hope to identify the above information by means of a number of activities which are oriented to involving legitimate representatives of the environmental elements. Involvement activities will center upon reacting to questions developed by a staff of experts which are designed to secure data which these experts may then analyze for the purpose of providing the desired information.

The following is a description of functions to be carried out by experts and representatives of environmental elements

> (Operational definition of expert: one who is cognizant of the elements and organizational structures representing such elements in one or more environmental spheres operating in the state of Iowa, i.e., political, social, economic.)

The experts will be engaged to develop a list of elements, and organizational structures representing such elements, for use by the project unit in inviting representatives of the structures to paricipate in a conference activity.

The experts will then meet for a pre-conference planning meeting. This will be a one-day meeting. The first portion will be to clarify expected roles and functions of the staff of experts. The remainder and major portion of the day will be divided into two parts. During the first, the experts will team up by specific environmental sphere for the purpose of developing materials to solicit reactions from representatives of environmental elements in the form of data which the experts may then utilize in an analysis of possible strategic variables and in identifying probable influences such elements may have on comprehensive planning activities in which the state education agency may engage. During the second portion of the day's activities, all the experts will meet to develop material for the same purposes but oriented to the effect which may be anticipated when elements from all three spheres of the environment operate in an interrelated system.

The materials developed by the experts will be left with the project staff at the end of the day and will be duplicated and transmitted to representatives of organizational structures who accept the invitation to attend the conference.

The concluding activity of the day will be the defining of the interaction to take place during the conference between the experts and representatives for purposes of helping the experts to validate the materials they have developed. This conference design activity will be conducted by a communications expert contracted for that purpose.

The conference for the representatives will take place according to the format developed by the communications expert. This will be designed to afford the experts the best possible means of deriving the information they need to provide for the project staff. Toward the end of the conference day the communications expert will meet with the other experts to discuss assignment of responsibilities for drafting the final document of information to be transmitted to the planning unit. The communications expert will assume overall responsibility for transmitting the final document on deadline.

INDIVIDUAL ROLES AND RESPONSIBILITIES TO BE ASSIGNED TO CONFERENCE STAFF MEMBERS:

Communications Expert:

I. Assess conference planning strategy

II. Assess pre-conference transmittal of information tactics to participant representatives

III. Assess pre-conference meeting in terms of experts' objectives. Prescribe conference didactics and interactions to produce information needed by experts to complete their assignments

IV. Be responsible for conducting the conference

V. Be responsible for compiling information provided by experts into final report for transmittal to planning project staff

Environmental Experts:

I. Identify environmental elements affecting educational planning in Iowa from the following spheres: social, political, economic

II. Identify organizational structures which represent these elements

III. Transmit information in I and II above to the project staff

IV. Attend pre-conference one-day meeting for following purposes:
   A. Orientation to desired information required by project staff
   B. Develop materials to:
      1. Assess what the representatives of the various elements regard as desirable goals for comprehensive educational planning (Operational definition of comprehensive educational planning developed by project staff)
      2. Assess which elements in the environment are relevant and the extent to which they determine strategic variables

3. Anticipate probable influences of such elements upon comprehensive educational planning.
4. Assess how these three environmental spheres operate in an interrelated system affecting comprehensive educational planning.

C. Develop and leave these materials with the project staff for pre-conference dissemination.

D. Work with communications specialist to structure conference didactics and interrelationships which will lead to an opportunity for the experts to utilize their materials in the identification of the desired information.

V. Participate in the conference in keeping with the design developed by the communications expert

VI. Report requested information (IV B 1, 2, 3, 4) to communications expert in a form amenable to compiling for final report

Validators:

The project staff believes it would be of value to have an independent evaluation of the information reported to the project staff as a result of the aforementioned activities. Three professional educators will be contracted to assess the activities and information generated thereby for the purpose of:

1) providing the project staff with an assessment of the validity and level of significance of the information generated.

2) indicating the possible existence of any gaps in the information reported.

SUMMARY OF RESULTS

This technique illustrated above was implemented by the project staff as a contracted activity. The outcomes of this validation activity provided the basis for developing many of the concepts utilized in this study. The outcomes were reported in a document containing: (1) pre- and post-conference reactions from individuals representing a cross section of environmental elements, (2) six analyses, two each in political, social, and economic spheres by university men deemed by their peers to be experts in their respective fields, (3) a summary report by a university man expert in the field of communications, and (4) three validation reports by university men from the field of education.

Appendix B

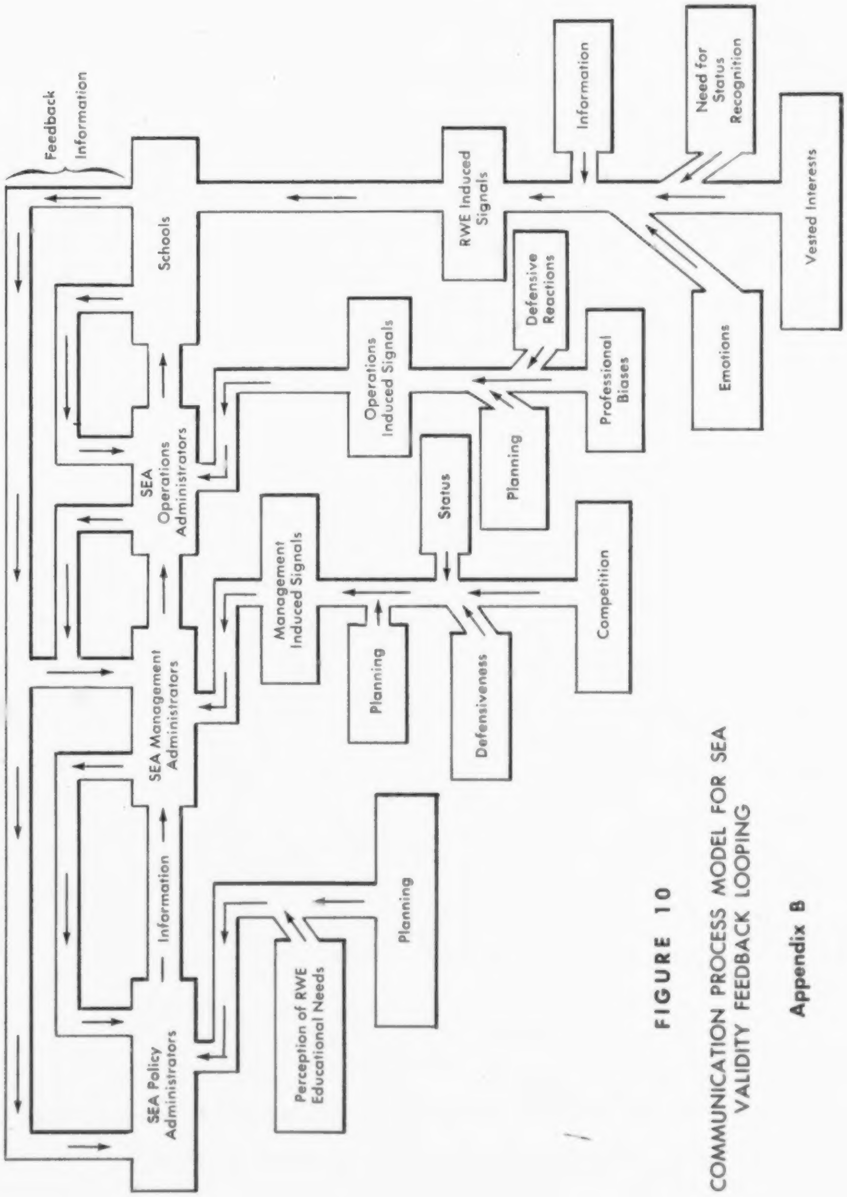

Feedback
Information
Schools
RWE Induced Signals
Information
Need for Status Recognition
Vested Interests
Emotions
SEA Operations Administrators
Operations Induced Signals
Defensive Reactions
Professional Biases
Planning
SEA Management Administrators
Management Induced Signals
Status
Competition
Planning
Defensiveness
SEA Policy Administrators
Information
Perception of RWE Educational Needs
Planning

FIGURE 10

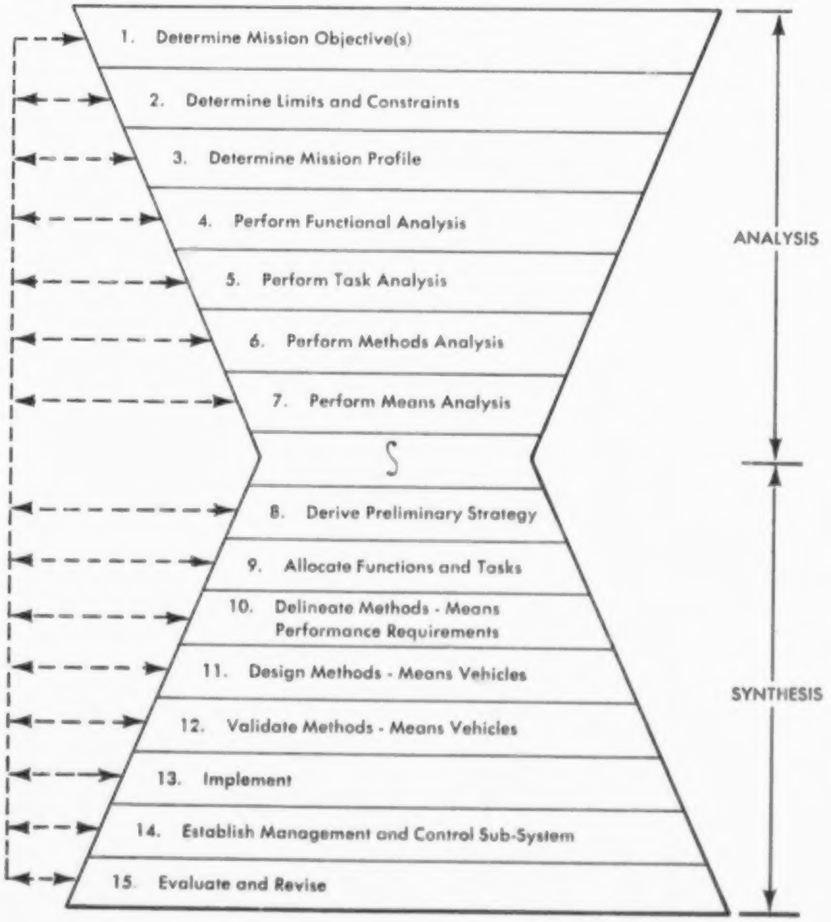
COMMUNICATION PROCESS MODEL FOR SEA VALIDITY FEEDBACK LOOPING

Appendix B

FIGURE No. 11

Appendix C

A MODEL OF THE SYSTEM APPROACH TO EDUCATIONAL PLANNING AND DEVELOPMENT[1]


1. Determine Mission Objective(s)
2. Determine Limits and Constraints
3. Determine Mission Profile
4. Perform Functional Analysis
5. Perform Task Analysis
6. Perform Methods Analysis
7. Perform Means Analysis
S
8. Derive Preliminary Strategy
9. Allocate Functions and Tasks
10. Delineate Methods - Means Performance Requirements
11. Design Methods - Means Vehicles
12. Validate Methods - Means Vehicles
13. Implement
14. Establish Management and Control Sub-System
15. Evaluate and Revise
ANALYSIS
SYNTHESIS

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[1] Robert E. Corrigan, Kaufman, Roger A., et al., **The Tools and Steps of the System Approach to Education**, prepared for Operation PEP, January, 1967.

Appendix D

REAL WORLD ENVIRONMENT (RWE) ELEMENTS[1]

Federal Government
- Department of Agriculture
  - Office of Economic Opportunity
  - Youth Corps
- Department of Health, Education and Welfare
- Department of Housing and Urban Development

Iowa State Government
- Board of Control
- Board of Social Welfare

Chairmen and ranking minority member of each of the education committees of the legislature, *or* the entire complement of both committees

- Chairmen of state central committees of both parties
- Civil Defense State Office
- Commission for the Blind
- County Chairmen of both parties
- Department of Public Instruction

Executive Council of the state consisting of: the Governor, the Lieutenant Governor, Secretary of State, State Treasurer, State Auditor, Attorney General, Secretary of Agriculture

- Higher Education Facilities Commission
- Iowa Development Commission
- Iowa Employment Security Commission
- Iowa Legislative Research Bureau
- Iowa State Department of Health
- Iowa State Employment Service
- Majority and minority leaders of both houses
- Manpower Development Council
- National committeemen and women of both parties
- Speaker of the Iowa House, President of the Iowa Senate
- State Coordinator of Federal Funds
- State Department of Social Welfare

---

[1] Plan for Planning (See Appendix C).

Occupational Organizations

AFL-CIO, United Auto Workers, Teamsters, and the American Federation of Teachers

American Association of University Professors
Chamber of Commerce and Junior Chamber of Commerce
Iowa Association of College Presidents
Iowa Farm Bureau
Iowa Manufacturers Association
Iowa Medical Society
Iowa Ministerial Association
Iowa State Bar Association
Mass communications media: Press and news services, etc.
National Farmers Organization
National Farmers Union

Other Organizations

Alcoholics Anonymous
American Association of University Women
American Friends Service Committee
American Legion
American Red Cross
Boy Scouts of America
Camp Fire Girls
Child Guidance Center
Girl Scouts
Iowa Association for Mental Health
Iowa Association for Retarded Children
Iowa Children's Home Society
Iowa Civil Liberties Union
Iowa Council on Alcoholic Problems
Iowa Council of Churches
Iowa Council on Family Relations
Iowa Good Roads Association
Iowa Society for Crippled Children and Adults
Iowa Taxpayers Association
Iowa Welfare Association
Jewish Social Service
League of Women Voters
National Association for the Advancement of Colored People
National Catholic Rural Life Conference
National Conference of Christians and Jews
National Urban League
Planned Parenthood Association
Rotary, Kiwanis, Lyons and other service clubs

Veterans of Foreign Wars
Women's Christian Temperance Union of Iowa
Women's Federated Clubs
Young Men's Christian Association
Young Women's Christian Association
Youth Opportunity Center

Public Employee Organizations

City Managers Association
County Officers Association
Finance Officers Association
Iowa High School Athletic Association
Iowa Public Health Association
Iowa Public Welfare Association
League of Iowa Municipalities

Educational Organizations

Advisory Council and the coordinating committee for the improvement of education in Iowa

Iowa Association of Adult Education
Iowa Association of County Superintendents
Iowa Association of Private Colleges and Universities
Iowa Association of School Administrators
Iowa Board of International Education
Iowa Congress of Parents and Teachers
Iowa Council for Better Education
Iowa Educational Conference Board
Iowa Elementary Principals
Iowa Public School Adult Education Association
Iowa School Board Association
Iowa Secondary Principals
Iowa State Education Association
National Education Association
North Central Accrediting Association
Representatives from the community colleges

Representatives of school districts using a sample based on a matrix of type of district (independent, community, consolidated) and size of enrollment, size of staff, and location (rural-urban)

Representatives from the various parochial school systems, including the Amish, Bureau of Jewish Education, Roman Catholic Archdiocese, State Board of Regents, etc.

Appendix E

METHODS/MEANS IDENTIFICATION

In anticipation of implementing the function of identifying methods/means (See page 24) and as a means of pilot testing some of the concepts contained within the planning process, the project unit surveyed some of the available tools of systems approaches to planning. Project Evaluation and Review Technique and Critical Path Method networks were found to be sufficiently developed for educational application to the planning process described in this report. The unit then initiated the collection of a data bank of inputs relating to time factors and job performances. The inputs for this data bank were collected as a result of individual interviews conducted with the personnel from a number of SEA operating divisions.[1]

A major product of these interviews was the cataloging of expert opinion regarding the nature of operational activities in which the interviewees engage, and based upon their experience, the time it takes to accomplish each.

This information was transferred to cards filed in a triple index system for manual retrieval as the need for this information might be required in developing project evaluation and review technique (PERT) networks for use by SEA administrators responsible for operations. (See Fig. 12)

POSITION TITLE ______________________________

DPI UNIT ______________________________

ACTIVITY ______________________________

DESCRIPTION OF ACTIVITY ________________

EXPECTED ELAPSED TIME (t_e) __________

a. Optimistic time (a) ________________

b. Most likely time (m) ________________

c. Pessimistic time (b) ________________

Fig. 12 — Manual Retreviel Index Card for SEA Operational Activities and Expected Elapsed Times.

---

[1] Limited project time did not allow for interviews with all SEA personnel or of the collection of cost data. These are scheduled for the near future.

Next, decision makers in charge of operations in the divisions surveyed were asked to supply the planning unit with an operations control problem input. In cooperation with division personnel responsible for carrying out the activities to which each problem input was addressed, the unit helped to perform a systems analysis indicating the objectives and tactics of each which were required in the solution of the problem. From an analysis of the units of work involved in achieving each objective, and from an analysis of the interdependency of objectives, a PERT network was drawn. A computer program which the SEA's Data Processing Division could utilize with their equipment was selected.[1] The units of work (jobs) and expected elapsed time (Te) for each were entered on data cards designed for the program (See Fig. 13). The information from these cards was keypunched into a data deck which was processed with the computer program. The computer print output provided information which was used to complete the PERT network in a manner suitable for administrative decision making at the operational level. This data included:

1) *preceding and succeeding event numbers* for each job (activity).

2) *a listing of jobs* in a predetermined desired order of sequence (sort code).

3) *activity duration* (Te) of each job.

4) *cost* for each job. (*See item 11.)

5) *early and late start time* constraint limits for each job.

6) *early finish and late finish time* constraint limits for each job.

7) *total float,* which is dependent on starting a job on the early start time. It indicates the maximum leeway possible for a job. Using any total float time will push the start of all succeeding jobs ahead that much.

8) *free float,* which is dependent on starting a job on the early start time. It indicates slack time which can be used without affecting any succeeding jobs.

9) *independent float,* indicating free float remaining if a job is started at its late start time.

10) *jobs which are on the critical path* of the network.

11) *total cost* of achieving solution to the problem as conceived in the systems analysis and in terms of jobs included on the PERT network. *(Data inputs for cost were not utilized in

---

[1] Critical Path Scheduling with Arbitrary Code Numbering for the 1401, 10.3.019 (4K), 10.3.020 (8k), IBM 1401 General Program Library.

the trial runs which were conducted, however the program was selected for its capacity to utilize such data when it is developed as a data bank by the SEA planning unit.)

12) *total duration of time* of the jobs.

13) *total number of jobs.*

14) *number of jobs on the critical path.* (Critical path is defined as the longest time sequence of activities, i.e., jobs, and events from the beginning of the network to the end.)

Utilizing the data cards (See Fig. 13) will allow either the decision maker or the SEA planners when called upon to do so, to update operational information as it is needed. For example, if, during the course of conducting SEA activities on the operational level, conditions change to make information pertaining to a job no longer valid, the data card for that job can be replaced with a data card containing updated information. This card can be quickly key punched, added to the other cards in the data deck in the sequence desired, and the entire deck re-processed for a print output that will show the effects the new information will have on operational activities (jobs) and events leading to the achievement of the end objective or solution.

There are other techniques for modifying PERT network information as the need to do so arises. By utilizing the technique above, when it is appropriate to do so, updated operational control information can be provided within an hour of the time that the need for it is discovered. This is an important capability for a planning process at the operational control problem level, where the contingency for solution oriented information is needed on a right here, right now basis.

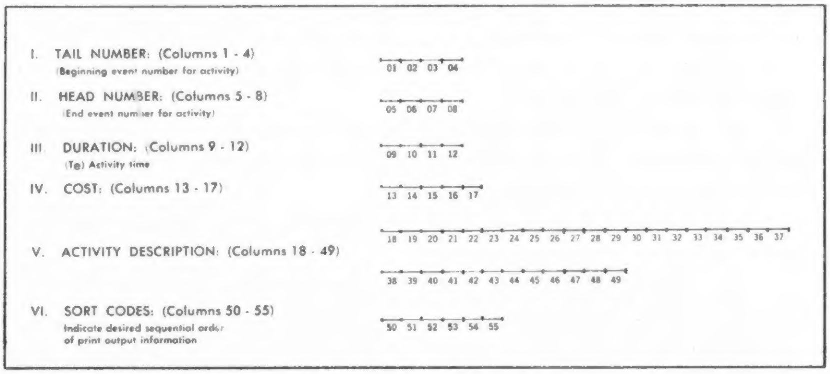

I. TAIL NUMBER: (Columns 1 - 4)
(Beginning event number for activity)
01 02 03 04
II. HEAD NUMBER: (Columns 5 - 8)
(End event number for activity)
05 06 07 08
III. DURATION: (Columns 9 - 12)
(Te) Activity time
09 10 11 12
IV. COST: (Columns 13 - 17)
13 14 15 16 17
V. ACTIVITY DESCRIPTION: (Columns 18 - 49)
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
38 39 40 41 42 43 44 45 46 47 48 49
VI. SORT CODES: (Columns 50 - 55)
Indicate desired sequential order
of print output information
50 51 52 53 54 55

Fig. 13 – Data Card Designed for Computer Application in Providing PERT Network Information.

Appendix F

Environmental Input - Output Model

This model can help to explain *how* the general environment is reacting to a given problem in terms of energy, resources and information, and *what* activities in seeking the attainment of its goals the SEA may undertake in system (SEA) – environment (RWE) interrelationships.

The model makes use of electronic analogies because as with electricity, we don't understand the exact makeup of some of the environmental inputs, such as the input referred to as energy. However, as in electronics, we believe it is not entirely necessary to understand the exact makeup of a phenomenon in order to measure it or harness it for desirable outcomes.

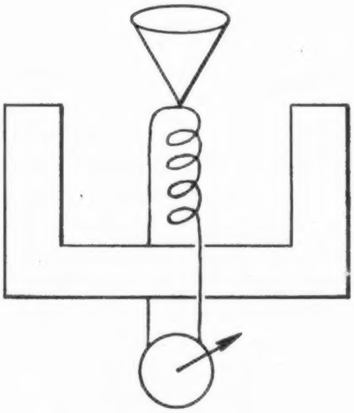
Because we use electronic terminology to describe by analogy the functions of some of the elements presented within this model, it is necessary to provide the reader with the definition of terms used.

Dynamic Transducer:

This is a device which transmits energy from one form to another. An example of such a device taken from the field of electronics would be a microphone (See Fig. 14). Simply stated,

FIGURE No. 14

Dynamic Transducer



this consists of a cone attached to a coil of wire which is positioned within a magentic force field. Sound waves impinging on the cone move the coil of wire within the magnetic field, generating a measurable current within the coil of wire. This process may be reversed. By generating a current through the coil of wire, the cone may be set in motion, producing sound waves. This is the principle by which most high-gain loudspeakers operate.

The value of utilizing the transducer concept as a model element lies in the opportunity it affords planners in 1) hypothesizing cause and effect relationships, 2) suggesting functional activities for the SEA which lend themselves well to strategic planning processes which, at times, may include attempts to modify environmental pressures, and 3) points within the model at which measurement may be attempted for the purpose of analysis (testing hypotheses).

ENCODER:

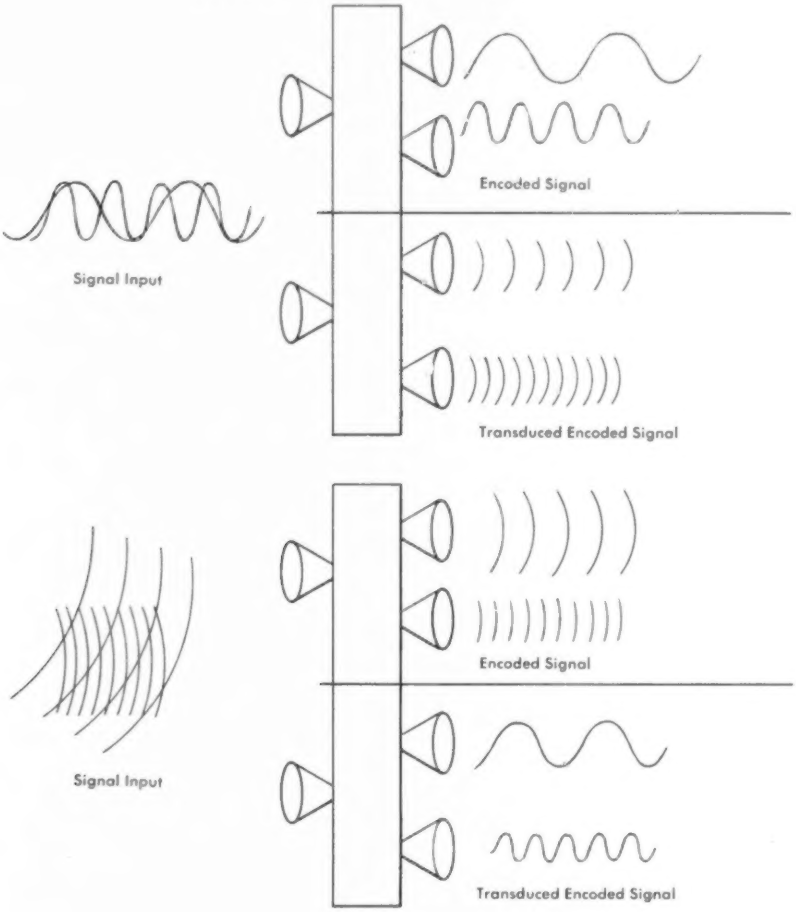
This is a device which is capable of separating a signal emanating from a complex source of energy into discrete portions and transmitting each portion as a separate entity, either in the original energy mode or transduced from one mode to another.

An example of such a device taken from the field of electronics is the first stage of the vocoder (See Fig. 15). This is a device which utilizes a series of narrow band filters which transduce only those portions of the audible speech range which are essential to intelligibility into electronic impulses for line transmission. The practical purpose which this device serves is to reduce the degree of energy which a line must carry at any given point in time, thus increasing that line's potential to carry a greater number of messages simultaneously.

The value of utilizing the encoder concept as a model element lies in its potential for: 1) describing, for purposes of analysis, the covert energy in the form of educational expectations which the RWE transmits overtly via a complex variety of substratified agencies and social institutions. These are usually observed as a variety of vested interest groups, lobbyists, news media, editorialists (and other public opinion formers), etc., and as activities which may be noted from voting practices, 2) the ability to identify cause-effect-cause cyclical relationships which may be noted from feedback phenomena that occur when given vested interest groups are able to modify the pressure of eduational expectations of the RWE, and 3) providing strategic information

FIGURE 15

EXAMPLES OF ENCODER FUNCTION



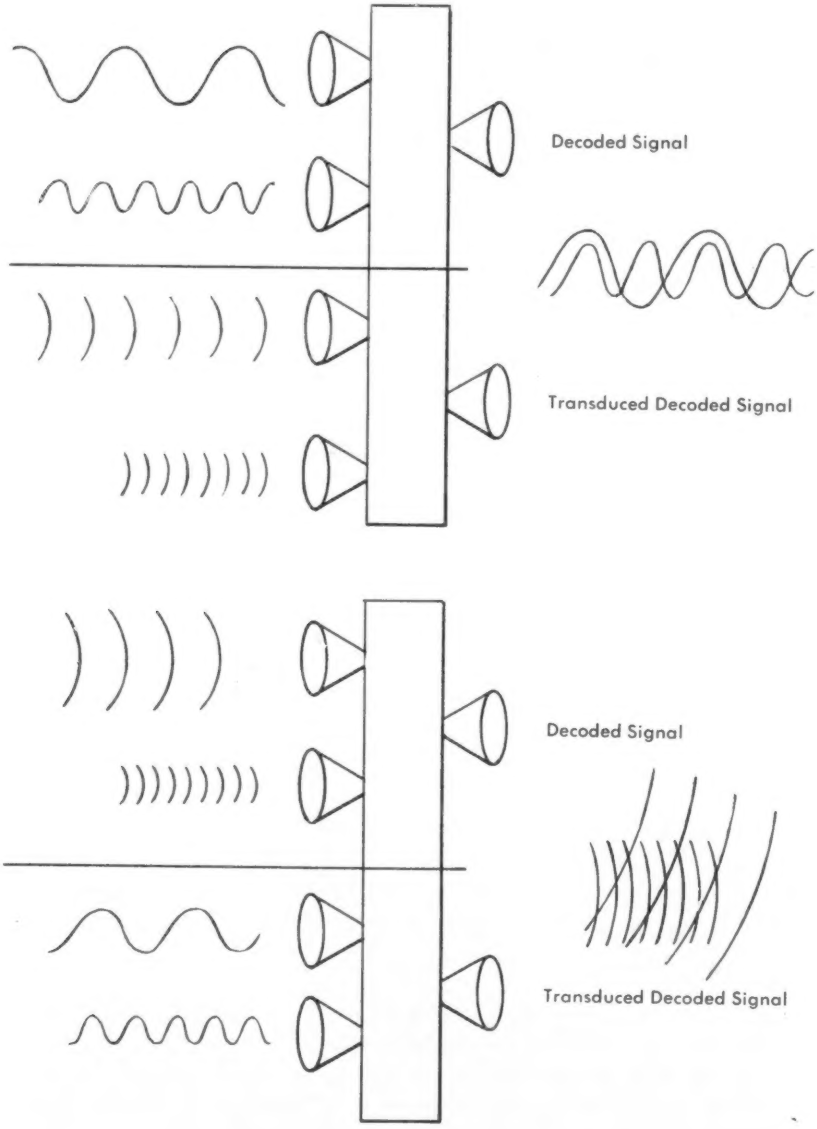
to educational decision makers pertinent to the variety of alternatives available to them in which the SEA may engage to best: boost, or reinforce; counter, or negate; or redirect the pressure formulated at the usually invisible operational level of the RWE.

DECODER:

This is a device which is capable of combining energy impulses from an encoded mode of transmission and assembling them as an accurate representation of the pre-encoded signal, or assembling and transducing them as a representation of the pre-encoded signal in a different energy mode (See Fig. 16).

FIGURE 16

EXAMPLES OF DECODER FUNCTION



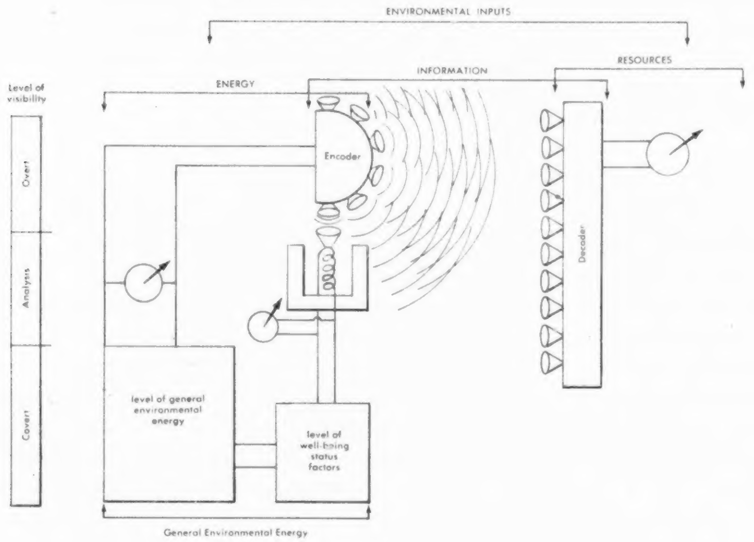
An example of such a device taken from the field of electronics is the second stage of the vocoder. This stage reassembles the discrete electronic energy transduced by the narrow band filters of the encoder into complex electronic energy which is then transduced by a speaker unit capable of producing sound waves over the audible range of hearing permitting the acquisition of an intelligible signal.

The value of utilizing the decorder concept as a model element lies in its potential for analyzing the activities of elements in the RWE, i.e., the Legislative Branch or Executive Branch of Government in their roles of representing the general environment and in their transduced activities of providing the financial resources, legislation, and policies directly affecting the SEA.

The environmental input-output model treats inputs of energy, resources, and information as highly interrelated factors, with the results of their interactions usually operating at three levels of visibility (See Fig. 17).

FIGURE 17

ENVIRONMENTAL INPUT - OUTPUT MODEL


ENVIRONMENTAL INPUTS
RESOURCES
INFORMATION
ENERGY
Level of visibility
Overt
Analysis
Covert
Encoder
Decoder
level of general environmental energy
level of well-being status factors
General Environmental Energy

Levels of Visibility. The model refers to the first such level as covert, in that the interrelationships operating at that level are not easily seen or identifiable; and any information concerning such interrelationships usually remain at the speculative stage.

The second level of visibility is that which can be seen or identified as a result of analysis, which in this model, is defined as the testing of hypotheses which refer to covert level interrelationships by testing data which is available from a variety of sources that operate on the overt level.

The third level is referred to as the overt level. At this level the interrelationships take on visibility in the form of information, demands, objections, and other quantifiable descriptive data from a large number of sub-stratifications of the general environment. However, such information is not easily acted upon because of the complex, voluminous, and often scrambled signal which emanates.

ENVIRONMENTAL INPUTS

Energy:

This model is based on the assumption that the energy emanating from the general environment, which we have labeled the z factor, is an everchanging product which results from: 1) the socio-psychologic needs of individuals, and the ethnic, social, economic, and political groupings with which individuals identify, as modified by 2) the status of what individuals in the general environment believe to be their level of well-being at any given time, which we have labeled the y factor.

Information:

The level of general environmental energy (z factor) is subject to modification by information which is generated by sub-stratifications of the environment and transmitted (fed-back) back to the environment in general. The degree of effectiveness such information has upon modifying the total energy output of the general environment is governed by those y factors which the consensus of individuals that compose the general environment believe to be responsible for determining their level of well-being status. These y factors are represented in the model as transducer force fields operating within an energy-information closed-loop feedback cycle.

y factors which can operate as force fields for the general environment feedback transducers must be capable of modifying energy at the covert level. Therefore, they must be capable of stimulating the environment as a whole instead of fractionalized substratifications of the environment. For that reason, force field factors will be represented in the model in terms which are generalizable to individuals in the environment, rather than to the variety of constellations in which individuals may, at times, be found to be grouped at the overt level. Once these factors are identified through analytical activity, they may be utilized in the model for: 1) formulation of strategic planning hypotheses based upon SEA-environment interrelationships, and 2) subjecting such hypotheses to inferential statistical analyses in order to provide planning information relevant to the consequences of a variety of alternative solution strategies.

Resources:

The total modified environmental energy (z factor) produced in the environmental energy-information loop is transmitted to the legislature and executive branches of government which in addition to being elements in the general environment, act as decoders in that they purport to be sensitive to the general environmental energy for purposes of transducing it into resource appropriations, as well as statute constraints and policies within which the SEA must operate. The model provides a basis for analyzing z factors with an end to finding critical levels of z which are necessary to effect those strategic planning activities of the SEA which are related to resources.

Let us examine how the Environmental Input-Output Model might be utilized by the SEA planners in providing information for a strategic planning problem.

PROBLEM

The SEA decision makers want information about the feasibility of increasing SEA leadership capacity to local educational agencies within the state. The increase of such services is dependent upon an increased appropriation for the SEA's operating budget. The problem input is stated as: Can the SEA anticipate an increase of "x" dollars in its next operating appropriations?

SOLUTION

The model allows the planning unit to make a number of hypotheses to assist decision makers to determine the nature of activities that are required for goal attainment. For example:

1) goal attainment is chiefly dependent upon the nature and level of energy in the general environment.

2) the nature and level of energy generated in the general environment must be modified (increased, decreased, rechanneled) prior to goal attainment.

3) the nature and level of total environmental energy has little effect upon goal attainment (goal attainment is primarily affected by decoder activity).

In order to test these hypotheses, the SEA planning unit will identify a number of force field factors pertinent to this type of problem which operate in the environment energy-information feedback loop. Let us say the planning unit identifies the force-field factor (y), as a coefficient of personal (family) expense divided by personal (family) income, as the one which is operational for the problem in the example. When personal expenditures are higher in relation to personal income, or increase when personal income is fixed, the coeffcient y is larger than when personal income exceeds personal expenditures or increases in relation to personal expenditures. The relative value of y can be plotted over a period of time during which the SEA has in the past attempted to achieve similar goals. A statistical correlation may be made for the plotted values of y with the level of degree of success of goal achievement experienced by the SEA in the past when certain types of feedback information were evident in the environment information feedback loop. If there is found to be a positive or negative correlation, critical levels of y may be ascertained for a variety of types of feedback information. The critical levels of y thus identified may be utilized by a planning unit in inferring the effects which certain types of information fed-back to the whole environment might have on the success or failure of goal attainment by the SEA. The types of feedback information thus identified may be utilized by the SEA in the selection of the kinds of activities in which it should engage in order to optimize goal attainment that is dependent upon environmental energy. Such activities, referred to as testing methods on page 19, categorized in model compatible terms may be defined as:

> Shunts: activities which are designed to lower the energy potential which specific RWE elements may contribute to the defeat of the attainment of desired SEA goals.
>
> Valves: activities that are designed to regulate the flow of energy of elements in the RWE, to best attain desired SEA goals.
>
> Switches: activities to direct the energy of combined elements in the RWE for the purpose of providing selective impetus to the attainment of desired SEA goals.

Another parameter of information to be considered in the example cited above is, if an identified force field factor y is found to be critical, it may be reasoned that information that is fed into the transducer from a correlated encoder information source will have a modifying effect on the energy emanating from the general environment. This modified level of energy may be designated $z=Cy$, with y designated as any real number larger than 0 and up to but less than 1. The constant C is designated as any hypothetical number greater than 1.

This model concept allows planning units to make some judgements concerning how total environmental energy may affect resources from one period of time to another. For instance, empirical evidence indicates that during periods of time when the status of the level of well-being for individuals in the general environment is threatened to a high degree, as in times of general retaliatory war, economic depressions, or fear producing dramatic incidents, such as the launching of Sputnik I, the relationship of z to y in the allocation of resources to education may be parabolic in that $z=C(y^2)$, while at other times, at the general level of environmental energy, the relationship of z to y may be linear, in that $z=Cy$. The planning unit in noting such differences may be able to provide educational decision makers with limited projections concerning the potential energy of the general environment for goal attainment. Such information may prove to be of value in determining the proper timing and general scheduling for the initiation of a variety of activities directed to SEA goal attainment.

If the planning unit finds in its analysis of a hypothesized force field factor, that no correlation exists, other force field factors would be tested. If no correlation exist for these as well, it may indicate that the SEA activities should be directed to the decoder element of the environmental system, for example, activities designed to sensitize decoder activity to environmental energy.

Comprehensive Planning in State Education Agencies

PART IV

A HANDBOOK
FOR
ORGANIZING AND IMPLEMENTING
A COMPREHENSIVE PLANNING PROCESS
FOR
THE COLORADO DEPARTMENT OF EDUCATION

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Denver, Colorado
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PREFACE

For many years the Colorado Department of Education consisted of a relatively small professional staff with a limited number of responsibilities. During this period, each Division of the Department had the responsibility for developing its own plans, and no formal planning unit was deemed necessary. The passage of the National Defense Act of 1958 marked the beginning of a new era for the Department, which since that time has had continuous growth. New programs have been developed, and new staff members were added to care for the responsibilities.

With the constant growth in both programs and staff, it became increasingly apparent that to fulfill its responsibilities the Deparment would need to reorganize and make provisions for the coordination of long-range, comprehensive planning. In December, 1966, the State Board of Education appointed an Assistant Commissioner of Education to direct an Office of Planning Services. This resulted in the present structure of the Colorado Department of Education which consists of four major Offices — Planning Services, Instructional Services, Administrative Services, and Library Services — each subdivided into five or six Divisions. In 1966 the major Divisions within the Office of Planning Services were Statistics and Data Processing, Publications and Public Information, and Departmental Administration. Early in 1967 a Division of Urban Education was created and attached to the Office of Planning Services.

In the spring of 1967, the State Board of Education approved Colorado's participation in the multi-state project entitled "Comprehensive Planning in State Educational Agencies" which was funded under the Elementary and Secondary Education Act, Title V, Section 505. The major goal of the project was to develop a comprehensive, integrated planning program for education. In turn, the purpose of such a planning program would be to achieve the maximum utilization of resources and to provide optimum services and leadership within state education agencies and local school systems.

The rationale of Colorado's planning process is based on a five-fold interrelationship of means and ends: better information, for better evaluation, for better coordination, for better decision making, for better instructional programs and supporting services. Much *intra*-office planning has been done in each of these five areas. The major effort of the planning staff has been to facilitate such planning on an *inter*-office basis.

The strategy of Colorado's plan for planning is first to refine the Department's proficiencies in comprehensive planning and second, to provide the necessary leadership for improving the planning competencies of the local educational agencies. Each aspect of comprehensive planning has its particular initial emphasis whether at the state or local level:

For better evaluation – to utilize this improved informational base for broadening and refining evaluative procedures. For better coordination – to insure that there is inter-office as well as intra-office cooperation. For better decision-making – to provide the best possible informational, evaluative, and cooperative base for making judgments. For better instructional programs and supporting services – to promote as standard procedure a team approach to problems and to relate all activities to the ultimate objective of improving instruction.

In the initial stages of the project the efforts of the planning staff were directed toward the preparation of materials and procedures to expedite the objectives described above. This *Handbook for Organizing and Implementing a Comprehensive Planning Process* presents the results of these efforts.

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CHAPTER 1

A Rationale for Planning

A. *Basic Principles of Planning*

B. *What Is the Planning Process?*

C. *What Is Continuous Planning?*

D. *What Is a Planning Agency?*

E. *What Is Comprehensive Planning?*

F. *Why Comprehensive Planning?*

INTRODUCTION:

Before effective planning can be initiated in any context, including education, certain philosophical and practical provisions must be accepted or rejected. This chapter proposes a range of considerations which together constitute Colorado's rationale for planning. At first glance it may appear to belabor the obvious to call attention to such a tenet as, "The planning process *helps* make decisions; it does not make decisions." However, if the full implications of such "obvious" statements are not thoroughly studied and understood, the "readiness" on the part of the staff to accept planners and planning is made unnecessarily difficult. Other statements included in this section may seem to be mere platitudes, e.g., "Planning is a process." Such statements, followed by sub-statements suggesting further ramifications, are introduced to point up the necessity for not taking such fundamental principles for granted. In this instance ("Planning is a process") what are the relationships of master plans, master planners, and the planning process?

The maxims included in this first section are to be found distributed rather sparsely among many papers and treatises concerning comprehensive planning. They are brought together here in a special format designed for self-study and for inservice training by those responsible for organizing, implementing, and evaluating a planning unit. This section is further designed to be equally applicable for local as well as state education agencies.

A. *Basic Principles of Planning*

1. The planning process
helps make decisions;
it does not make decisions.

2. The planning process
is best approached objectively,
but the final decisions about
national goals and the general welfare
are necessarily a subjective matter.

3. The single solution
for a given problem
is the exception rather than the rule;
the rule in most problem-solving situations
is that several solutions will suggest themselves.

4. Realistic planning
is reasonably flexible.

5. Educators must accept
both the inevitability
and the acceleration
of change.

6. Readiness for change
doesn't just happen
it must be encouraged.

7. There can be change without improvement
but not improvement without change.

8. Purposeful change
has both force
and direction.

9. Educational planning
is a cooperative process
with centralized leadership.

10. One agency planning for another
is almost certain to be ineffective.

11. Planning by state departments of education
coordinates state efforts towards state-wide goals.

12. Planning by state departments of education
should supplement rather than supplant
local efforts towards local goals.

13. State and local capacity
for long-range planning
should be increased.

14. Specific personnel
should be assigned
specific responsibilities
for long-range planning.

15. Brush-fire tactics
are more costly
than preventive strategies.

16. Realistic planners are
constantly concerned with the
optimum combination of

ends - means
future - present
theory - practice
plans - actions
group action - individual action
non-direction - direction
unanimity - concensus

B. *What Is the Planning Process?*

1. Planing
    is a process.

2. The planning process is
    a means for making decisions
        about what will be,
        about what ought to be,
        about what ought to be done,
        about how to go about doing it.

3. The planning process is
    a means for making decisions
        about why changes should be made,
        about what changes should be made,
        about how changes should be made,
            about who should make changes,
            about when changes should be made,
            about where changes should be made.

4. The planning process is
    a procedure for interrelating
        better information
            for better evaluation
                for better coordination of efforts
                    for better decision-making
                        for better educational
                            programs.

5. The planning process is
    a procedure for coordinating
        better problem-articulation
            for better problem-solving
                for better educational programs.

C. *What Is Continuous Planning?*

1. Planning for change
is a continuous process.

2. Quality control of continuous planning
necessitates continuous evaluation
during each phase of the planning process.

3. Continuous planning
is a method of continuous evaluation
of the context of the problem,
of the sufficiency of "input,"
of the appropriateness of procedures,
of the adequacy of results.

4. Programming
is a method of
describing planned activities
in terms of the relation
of "input" to "output."

5. Continuous planning
is a means for
determining procedures,
drafting procedures,
adopting procedures
implementing procedures,
evaluating procedures,
and revising procedures.

6. An office of
continuous planning
is an agency for
determining planning procedures,
drafting planning procedures,
adopting planning procedures
implementing planning procedures
evaluating planning procedures
and revising planning
procedures.

D. *What Is a Planning Agency?*

1. A planning agency
   is a change-agency.

   2. Change-agencies
      can influence institutional change.

      3. Changing institutions
         depends upon people changing.

         4. Changing people
            depends upon changing behavior.

            5. Changing behavior
               depends upon changing attitudes.

               6. Changing attitudes
                  depends upon emotional
                  as well as logical conviction.

7. A comprehensive planning agency
   implements the cooperation of
   the general public,
   the political community,
   the academic community,
   and the professional community;
   the reseacher,
   the developer,
   and the practitioner.

E. *What Is Comprehensive Planning?*

1. Improvement is
a change for the better.

2. Improvement depends upon
better decision making.

3. Better decision making
depends upon better planning.

4. Better planning depends upon
more comprehensive planning.

5. Comprehensive planning
is a logical process for
implementing continuous improvement.

6. Implementing continuous improvement
necessitates a logical process for
organizing systematic change.

7. Organizing systematic change
necessitates a logical process for
preparing for the future.

8. Preparing for the future
necessitates a logical process for
preventing undesirable change
and producing desirable change.

9. Producing desirable change
necessitates a logical process for
clarifying uncertainties,
objectifying assumptions,
articulating aspirations,
and defining criteria of performance.

10. Defining criteria of performance
necessitates a logical process for
stating goals in terms of desirable behavioral objectives.

11. Stating educational goals in terms of
desirable behavioral objectives
necessitates a logical process for establishing
an inventory of present and projected
local, state, national, and international
needs.

12. Establishing an inventory of needs
necessitates a logical process for
gathering, evaluating, and projecting
information.

13. Gathering, evaluating, and projecting
information.
necessitates a logical process for
assessing resources as well as needs.

14. Assessing resources as well as needs
necessitates a logical process for
making the best use of available resources.

15. Making the best use of available resources
necessitates a logical process for
matching objectives, techniques, and resources.

16. Matching objectives and resources
necessitates a logical process for
doing first things first.

17. Doing first things first
necessitates a logical process for
comprehensive planning.

F. *Why Comprehensive Planning for Education?*

What is the purpose of such a *process* of
continuous, comprehensive EDUCATIONAL planning?

. . . To develop a long-range policy and/or operations guide which will maximize the use of available resources for attaining the educational objectives of individuals and society.

CHAPTER 2

Educational Planning: A Range of Considerations

A. *Organizing for Educational Planning*
B. *Implementing Educational Planning*
C. *Evaluating Educational Planning*

INTRODUCTION:

The essence of comprehensive planning is that, as nearly as is possible, all relevant factors should be considered at each step of the planning process. Assurance that one's approach is comprehensive is as necessary for the initial problem of developing a plan for planning as it is for the subsequent application of that planning process to all other problems. This section presents in concise check-list form a range of practical considerations for setting up a planning unit.

Too often it is taken for granted that the various aspects of a familiar problem are self-evident. Equally often, certain preconceived notions about ways and means for solving a given problem leap to mind, and their familiarity tends to exclude a range of other applicable approaches and resources. Just as deceptively, parts are mistaken for the whole, and means usurp the attention while ends are assumed to be valid without sufficient definition or challenge. As a result, symptoms are treated when efforts might better be directed at the causes. The following check-lists are therefore proposed as a method for ascertaining the comprehensiveness of planned solutions to problems whether or not those responsible for the planning consider themselves to be experienced or inexperienced planners.

A. *Organizing for Educational Planning*

Personnel for Planning?

1. Basic staff
2. Related staff
    a. Intra-office staff
    b. Extra-office staff
        1. Local agencies
        2. State agencies
        3. Regional agencies
        4. National agencies
        5. International agencies

Public Relations?

1. Before planning
2. During planning
3. Following planning
4. With general public
5. With administrative officials
6. With legislators
7. With researchers
8. With developers
9. With practitioners

Criteria for Planning?

1. Comprehensive
2. Continuous
    a. Short-range
    b. Medium-range
    c. Long-range
3. Systematic process
4. Qualitative
5. Quantitative
6. Cooperative
7. Coordinated
8. Consistent
9. Balanced
10. Efficient
11. Economical

Scope, Focus of Planning?

1. Pupils
    a. Skills
    b. Attitudes
    c. Behavior
2. Personnel
    a. Skills
    b. Attitudes
    c. Behavior
3. Program
    a. Content
    b. Organization
    c. Methods, materials
4. Facilities
5. Finance
6. Vertical (elementary, secondary education, etc.)
7. Horizontal (general, special education, etc.)
8. Public sector
9. Private sector

B. *Implementing Educational Planning*

Where Are We?

1. Sources of information
    a. Existing records
    b. Special surveys
    c. Consultation
2. Usable information
    a. Clarified
    b. Analyzed
    c. Diagnosed
3. Problem format
    a. History of problem
    b. Causes of problem
    c. Ramifications of problem

Where Do We Want to Go?

1. Behavioral objectives

2. Type of needs
    a. Individual
    b. Societal

3. Inventory of needs
    a. Current
    b. Projected

4. Priority of needs
    a. Current
    b. Projected

How Do We Get There?

1. Inventory of solutions
    a. Current
    b. Projected
2. Criteria of priorities
    a. Needs of individuals
    b. Needs of society
    c. Current needs
    d. Projected needs
    e. Resources
3. Ways
    a. Adopted solutions
    b. Adapted solutions
    c. Original solutions
4. Means
    a. Project personnel
    b. Physical resources
    c. Economic resources
    d. Time

C. *Evaluating Educational Planning*

Accuracy of Analysis?

1. Scope, focus of planning

2. Sources of information

3. Utilization of information

4. Inventory of needs

5. Priority of needs

Adequacy of Means?

1. Planning staff
2. Public relations
3. Criteria of planning
4. Sufficiency of . . .
    a. Project personnel
    b. Physical resources
    c. Economic resources
    d. Time

Appropriateness of Ways?

1. Inventory of solutions
2. Priority of solutions
3. Flexibility of . . .
    a. Adopted solutions
    b. Adapted solutions
    c. Original solutions

Adequacy of Results?

1. Change of skills
2. Change of attitudes
3. Change of behavior
4. Dissemination

CHAPTER 3

Some Problems for CDE Attention

A. *Administration*
B. *Pupils*
C. *Program*
D. *Personnel*
E. *Finance*
F. *Information*

INTRODUCTION:

The following categorization of Colorado problems is submitted here as a typical sampling of educational issues, most of which are applicable to most states. Such listings and groupings of problems are necessary first steps in arriving at a long-range policy and/or operations guide for comprehensive planning in education. Each state has in its files a record of the major and minor educational surveys done by its citizens groups, professional organizations, governmental agencies, and local school systems. It would be the exception rather than the rule to find a State Department of Education which is not currently involved in one or more self-evaluation projects. It is from such studies that the problems listed in this section were compiled.

A list compiled by a particular state can serve as a point of departure for seeing in large perspective the parameters of that state's problems in education. Surveys and studies of public education are indeed plentiful. The use of their full potential for planning has probably not been achieved in the past. Ideally, for planning to be truly comprehensive, each problem should be viewed in relationship to all other problems of the system. Only then is there a possibility of differentiating between symptoms and causes, means and ends. To the extent that the parts can be seen in relation to the whole, there is the possibility of establishing priorities and planning a consistent, balanced, efficient, and economical program.

A. *Administration*

1. A plan for planning commensurate with the scope and rapidity of change.

2. A plan for a pragmatic balance of leadership, service, and regulation, while fostering development and planning.

3. A plan for maintaining as broad a base as possible for educational decision-making.

4. A plan for maintaining local integrity in relation to the state government.

5. A plan for the CDE to represent the problems and interests of local districts to the general public, to the Legislature, and to federal agencies.

6. A plan for providing more leadership and services for larger school districts.

7. A plan for uniquely suburban problems.

8. A plan for uniquely rural problems.

9. A plan for maintaining State integrity in relation to the Federal government.

10. A plan for allocating federal monies consistent with desirable state and local paterns of expenditures.

11. A plan for relating educational decisions to the plans of other (non-educational) state agencies.

12. A plan for increasing intra-agency (educational and non-educational) cooperation at the local, state, and federal levels.

13. A plan for coping with the increasing educational complexities of administration.

14. A plan for coping with the increasing administrative complexities of education.

15. A plan for stimulating more wide-spread application of modern technology and management techniques to educational administration.

B. *Pupils*

1. A plan for better identifying educational needs.

2. A plan for meeting the educational needs of *all* children.

3. A plan for meeting the educational needs of *all* adults.

4. A plan for better defining and relating "educational needs," "comprehensive programs," "special programs," and "compensatory programs."

5. A plan for better defining and relating "educational needs," the "disadvantaged" or "deprived," "individual differences," and "equal opportunity."

6. A plan for eliminating the dropout problem.

7. A plan for accommodating those students acquiring English as a second language.

8. A plan for expediting the fullest and most flexible use of materials and media for individualized programs, for individualized instruction, and for independent study.

C. *Program*

1. A plan for coping with the range of educational programs being demanded:
    a. Programs proposed to educate some people for some things.
    b. Programs proposed to educate all people for some things.
    c. Programs proposed to educate some people for all things.
    d. Programs proposed to educate all people for all things.

2. A plan for better local and state assessment of existing programs.

3. A plan for stimulating planned change in improving the curriculum.

4. A plan for stimulating planned change in improving teaching-methods and evaluation.

5. A plan for stimulating planned change in improving facilities and materials.

6. A plan for relating the instructional program to occupational and professional opportunities projected locally, regionally, nationally and internationally – "learning to earn."

7. A plan for encouraging and publicizing programs which emphasize the learning process itself, problem solving, critical thinking, discovering concepts, establishing personal goals, self-direction, and creativity — "learning to learn."

8. A plan for stimulating pilot projects and demonstration programs.

9. A plan for dealing with contingency problems.

D. *Personnel*

1. A plan for better identifying the criteria of effective teaching.

2. A plan for the improvement of teacher preparation programs.

3. A plan for the improvement of student-teaching programs.

4. A plan for enforcing the proper (certificated) and equitable placement of teachers.

5. A plan for the improvement of inservice activities for administrations.

6. A plan for the improvement of inservice activities for teachers and other staff members.

7. A plan for the improvement of inservice activities for state department personnel.

8. A plan for providing inservice activities for those college personnel responsible for preparing teachers.

9. A plan for promoting locally sustained inservice activities.

10. A plan for providing increased training in specialized areas.

E. *Finance*

1. A plan for publicizing and relating change, the costs of education, and the need for additional resources.

2. A plan for relating the quality and cost of education.

3. A plan for converting to program-oriented budgeting.

4. A plan for coordinating the utilization of educational resources.

5. A plan for equalizing the utilization of educational resources.

6. A plan for integrating Colorado's local, state, and federal educational expenditures.

7. A plan for establishing a pragmatic balance of general and categorical aid.

F. *Information*

1. A plan for a single state information retrieval center to serve all state agencies.

2. A plan for identifying Colorado's technical, professional, and cultural resources.

3. A plan for facilitating the search for and identification of already existing, relevant solutions.

4. A plan for facilitating the dissemination of information about, and the demonstration of, innovative procedures being applied in Colorado and neighboring states.

5. A plan for publicizing educational successes.

6. A plan for publicizing educational failures.

CHAPTER 4

The Colorado Plan for Comprehensive Planning

A. *Assessment of Planning Components*
B. *Preparation of Materials*
C. *Departmental Inservice*
D. *Implementation at State Level*
E. *Implementation at Local Level*
F. *Planning Councils and Channels*
G. *Advisory Groups*
H. *Summary*

INTRODUCTION:

The particular steps which Colorado took in developing a Department-wide planning process are described in this section. Basic premises include 1) that all members of the Department have a role in planning, 2) that the particular role of the planning staff is one of service and coordination, and 3) that cooperative effort is the essence of comprehensive planning. Towards these ends, four Office Planning Councils were established to provide *vertical* coordination for the Divisions within each Office. A Departmental Planning Council was established to provide *horizontal* coordination for the four Offices within the Department.

Within the frame of reference of the Department's commitment to leadership, service, and supervision, the particular parameters of the educational system were identified as 1) the instructional program, 2) supporting services for pupils, and 3) supporting services for staff. Corollaries of these three major thrusts are facilities and finance. Each problem and plan is reviewed in terms of these basic parameters.

A "nuts-and-bolts" approach was adopted to avoid the classical pitfalls encountered when initiating a plan for planning, namely, to develop so sophisticated a model or to "blue sky" so long that workable plans are never realized. Current Departmental objectives, while subject to review, were accepted as points of departure. Specific guidelines for submitting plans were presented at Departmental workshops, and specific channels for reviewing plans were put into operation.

A. *Phase I: Assessment of Components of a Comprehensive Planning Process*

Organizing for educational planning necessitates choosing among many possible and often conflicting alternatives. Basic commitments need to be made, a consistent rationale needs to be articulated, specific parameters of objectives have to be established, and workable points of departure must be chosen.

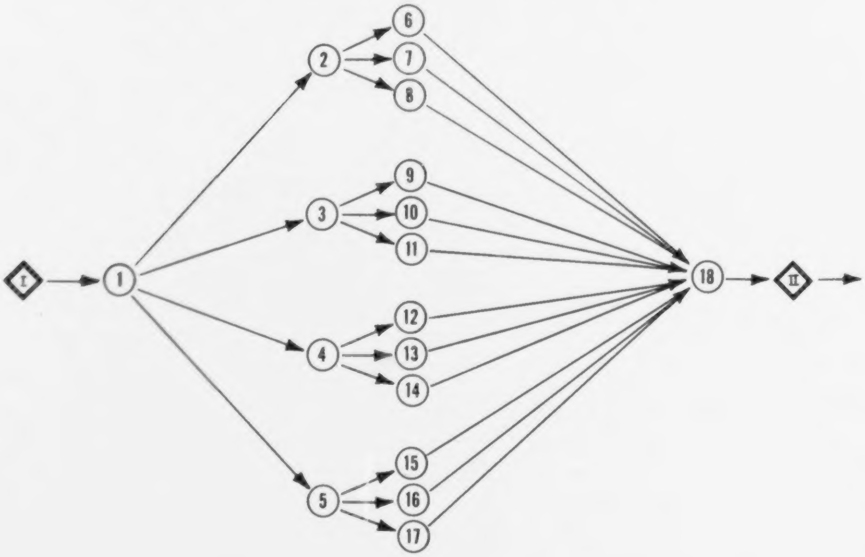
Section I of this handbook outlines in detail the basic commitments of this plan for planning. Most important among them are those commitments which maintain that planning is a continuous, comprehensive, and coordinated process. Viewed as a dymanic and continuous process, the measure of effective planning is its capacity for avoiding two extremes, the wastefulness of brushfire expediences and the obsolescence of master-plans.

The basic rationale of this plan for planning is better information, for better evaluation, for better coordination, for better decision-making, for better instructional programs. This rationale is itself a delineation of process. These five interdependent considerations constitute the major objectives of the planning process proposed here. They are generic considerations. Each is a necessary objective in any comprehensive plan which leads to the ultimate objective of improving instruction.

The improvement of the instructional program includes the improvement of supporting services for pupils and supporting services for staff. These three major objectives encompass all the responsibilities and functions of an education agency whether it be at the state or local level. A plan for improvement in any one of these areas necessitates consideration of the others. In turn, each objective (better information, better evaluation, better coordination, better decision-making, better instruction, better supporting services for pupils, better supporting services for staff) is part of an organic whole. Together they constitute the parameters of educational problems.

For workable points of departure, the present objectives and the ongoing activities of the Department have been accepted as valid and constructive. This is not to say that each objective and activity of the Department does not need reassessment. The plan is to walk first and run later. The first step towards planned improvement would be to coordinate better the ongoing activities of the Department. At the same time a foundation and a readiness for a department-wide planning program are to be established. This "nuts-and-bolts" approach constitutes a purposeful plan for

Phase I: Assessment of Components of a Comprehensive Planning Process



◇I **Phase I:** **Assessment of Components of a Comprehensive Planning Process**

1 **Assessment** of Department's Administrative Functions Started
2. **Assessment** of Department's Information System Started
3. **Assessment** of Department's Evaluation Procedures Started
4. **Assessment** of Department's Decision-Making Procedures Started
5. **Assessment** of Department's Coordination Procedures Started
6. **Assessment** of Information re Instructional Program Completed
7. **Assessment** of Information re Supporting Services for Pupils Completed
8. **Assessment** of Information re Supporting Services for Staff Completed
9. **Assessment** of Evaluation re Instructional Program Completed
10. **Assessment** of Evaluation re Supporting Services for Pupils Completed
11. **Assessment** of Evaluation re Supporting Services for Staff Completed
12. **Assessment** of Decision-Making re Instructional Program Completed
13. **Assessment** of Decision-Making re Supporting Services for Pupils Completed
14. **Assessment** of Decision-Making re Supporting Service for Staff Completed
15. **Assessment** of Coordination re Instructional Program Completed
16. **Assessment** of Coordination re Supporting Services for Pupils Completed
17. **Assessment** of Coordination re Supporting Services for Staff Completed
18. **Assessment** of Department's Administrative Functions Completed

◇II **Phase II:** **Preparation of Planning Materials** avoiding the two classic pitfalls of initiating a planning program, i.e., constructing too sophisticated a model and/or "blue-skying" to the extent that workable plans are never realized. The sequence of activities described in Phase II through V is designed to improve the present operations of the Department and at the same time initiate a more formal planning process.

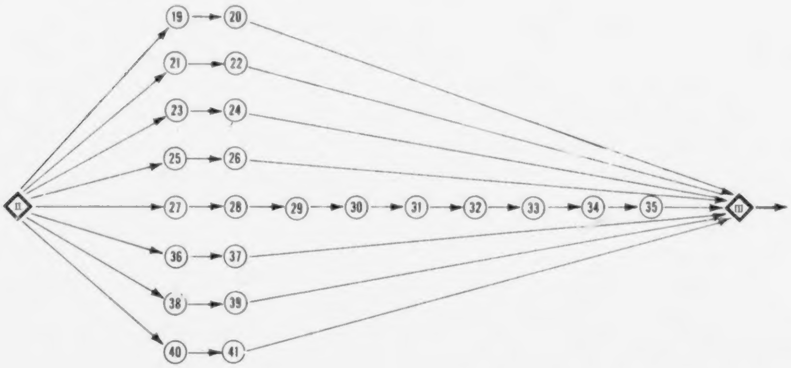
B. *Phase II: Preparation of Planning Materials*

The activities and the preparation of materials initiated in Phase II constitute an immediate frontal attack on the strategic objectives identified in Phase I, i.e., better information, evaluation, decision-making, coordination, and instruction. A brief description of these initial efforts is presented below only as an example of the range of activities which such a pragmatic rationale entails.

As first steps towards a better information system, all items of the Midwestern States Educational Information Project were collated in a single model; a directory of state-agency information sources (other than the education agency) was begun; and a survey of legislative and citizen opinion about educational issues was conducted. For purposes of better evaluation, and/or information, an extensive evaluation and planning instrument was prepared, hereafter referred to as "Quality-Quantity Checkpoints: A Range of Evaluative Criteria." For better decision-making, a systematic review was begun of the applications of program-oriented budgeting by other state education agencies. The completion of an analysis of the Department's current responsibilities and functions and the preparation of a plan for a more functional use of office space were first steps in improving department-wide coordination.

The preparation of this planning manual was also initiated in Phase II. The manual incorporates the results of most of the activities above. The purpose for compiling this information in a handbook is to provide practical guidelines for organizing, implementing, and evaluating a comprehensive planning program – a manual for, rather than about, planning. The compilation of materials included here is cumulative and open-ended. Thus far the major sections deal with 1) a rationale for planning, 2) a range of considerations for organizing, implementing, and evaluating a planning program, 3) a range of major educational problems for the Department's consideration, 4) a description of the Department's planning channels and advisory groups with

Phase II: Preparation of Planning Materials



II Phase II: Preparation of Planning Materials

19. Collation of MSEIP Data Items Started
20. Collation of MSEIP Data Items Completed
21. Format for Information Directory Started
22. Format for Information Directory Completed
23. Survey of Procedures and Instruments for State Evaluation System Started
24. Survey of Procedures and Instruments for State Evaluation System Completed
25. Opinion Survey of Public and Legislators Started
26. Opinion Survey of Public and Legislators Completed
27. **Handbook for Organizing and Implementing a Comprehensive Planning Process** Started
28. Chapter 1: "Rationale and Principles of Comprehensive Planning" Completed
29. Chapter 2: "Checklists for Organizing, Implementing, and Evaluating Comprehensive Planning" Completed
30. Chapter 3: "Inventory of Educational Problems in Colorado" Completed
31. Chapter 4: "Colorado's Plan for Planning" Completed
32. Appendix: "Quality-Quantity Checkpoints for Assessment and Planning of the Instructional Program" Completed
33. Appendix: "Quality-Quantity Checkpoints for Assessment and Planning of Supporting Services for Pupils" Completed
34. Appendix: "Quality-Quantity Checkpoints for Assessment and Planning Supporting Services for Staff" Completed
35. **Handbook for Organizing and Implementing a Comprehensive Planning Process** Completed
36. Survey of PPBS Procedures and Instruments Started
37. Survey of PPBS Procedures and Instruments Completed
38. Survey of Department's Organization, Responsibilities, and Activities Started
39. Survey of Department's Organization, Responsibilities, and Activities Completed
40. Assessment of Department's Space Requirements Started
41. Assessment of Department's Space Requirements Completed

III Phase III: Departmental Inservice

a flow-chart description of the sequence of major planning activities, and 5) a range of quality-quantity checkpoints for the improvement of the instructional program.

The "Quality-Quantity Checkpoints" of Appendix A are proposed as pragmatic guidelines for analyzing problems and planning solutions. The range of considerations of these checkpoints will be further expanded to include, when possible, a correlation of authoritative opinion and cost estimates. The emphasis of this particular planning instrument is on a comprehensive range of analytical approaches and alternative solutions.

C. *Phase III: Departmental Inservice*

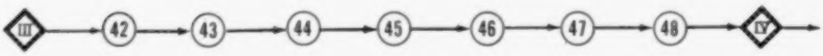
This phase consisted of three inservice meetings. The principles and techniques of the planning process were studied first in terms of the Department as a whole, then in terms of the individual's role.

The first meeting was devoted to examining the basic principles of good planning and the ways in which continuous, comprehensive, coordinated planning can maximize the Department's effectiveness. While planning is certainly not new to the Department, the type of continuity, comprehensiveness, and coordination proposed here suggests at least a new dimension of formal planning. This new dimension was the theme of the first inservice meeting.

The role of the planning staff was the subject of the second meeting. The planning unit was explained as a change agency. Facilitating cooperation and coordination were cited as its primary function. Members of the planning staff were described as coordinators rather than initiators, as facilitators rather than implementers, as decision-helpers rather than decision-makers. A basic premise was that one unit planning for another is almost certain to be ineffective. The theme of the second session was that the Department now provides a new service, a planning service.

The third inservice meeting treated the role of the individual in the planning process. The responsibility of individual staff members for proposing plans was examined. Every effort was made to encourage staff members to "do something" about their favorite plans. It was pointed out that new channels and new materials have been designed specifically for facilitating a continuous, comprehensive, and coordinated planning process. These channels for planning and the range of uses of this handbook were the main topics of the meeting. Any trepidations, confusions, or frustrations about proposing plans were countered by establishing clear-cut review channels and by providing a format for submitting proposals. These new ways and means for departmental planning were the theme of the third inservice meeting.

Phase III: Departmental Inservice



◇III **Phase III: Departmental Inservice**

42. **Materials for Departmental Inservice Started**
43. **Materials for Departmental Inservice Completed**
44. **Inservice Sessions Started**
45. **First Inservice Session Completed: The Department's Responsibility for Comprehensive Planning**
46. **Second Inservice Session Completed: The Planning Staff's Responsibility for Comprehensive Planning**
47. **Third Inservice Workshop Completed: The Individual Staff Member's Responsibility for Comprehensive Planning**
48. **Inservice Sessions Completed**

◇IV **Implementation of Comprehensive Planning Process in the Department**

D. *Phase IV: Implementation at State Level*

During Phase IV the basic elements of this plan for planning – i.e., the three sources of plans within the Department, the format for submitting planning proposals, and the channels for their review – were interrelated operationally.

The three sources of plans are 1) the individual staff member, 2) the Office of the Commissioner, and 3) the Planning Division. Plans originating with individual staff members, their Divisions, and their Offices represent the broadest base for planning. While plans originating on such a broad basis will reduce the number of occasions requiring emergency planning, it is recognized that contingency planning will still be necessary. Therefore, a second type of planning must provide for contingency planning requested by the Office of the Commissioner. A third source of plans is the Planning Division itself, although coordination of planning is the first responsibility of this unit.

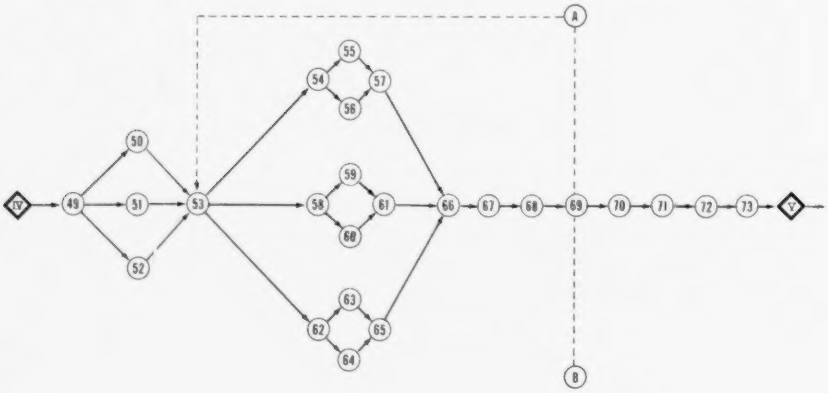
The format for planning provides a check and balance instrument for insuring the comprehensiveness of any proposal. The basic reference points for any proposal are the plan's potential for improving the instructional program, the supporting services for pupils, and the supporting services for staff. More detailed guidelines are provided by the "Quality-Quantity Checkpoints" of Appendix A. These checkpoints include the following range of considerations: 1) Planned Instructional Outcomes, 2) Entrance Requirements and Pupils Served, 3) Type of School System, School, Program, 4) Subject Matter, Program Content, 5) Instructional Media, Personnel, Materials, 6) Instructional Methods, Resources, Individualization, 7) Time and Place, 8) Pupil Progress, Promotion, Graduation, 9) Supporting Services for Pupils, 10) Supporting Services for Staff, 11) School Services for the Community, and 12) Evaluation and Curriculum Improvement.

For approval, plans are reviewed by three councils — an intra-Office council, an inter-Office council, and the Administrative Council. Plans originating in the offices of Instruction, Administration, Planning, or the State Library are first submitted to their respective Planning Councils. The purpose of these Office Planning Councils is to facilitate coordinated intra-Office and inter-Division planning. Plans approved by these Office Planning Councils are then submitted to the CDE Planning Council. The purpose of this Departmental Planning Council is to faciliate coordinated Departmentwide, inter-Office planning. Plans approved by the Departmental Planning Council are then submitted for approval to the Commissioner and his Administrative Council, pending final approval, when approporiate, by the State Board of Education.

E. *Phase V: Implementation at Local Level*

Having implemented an operational planning program during Phase IV, the Department is now in a position to provide the leadership and service necessary for helping local districts organize their own planning programs. This handbook for educational planning is designed for use at the district as well as the

Phase IV: Implementation of Comprehensive Planning Process in the Department



◇IV Phase IV: Implementation of Comprehensive Planning Process in the Department

49. Implementation of Departmental Planning Process Started
50. Planning Staff Assumes Role of Coordinating Plans Originating With Divisions
51. Planning Staff Assumes Role of Coordinating Plans Originating With Commissioner
52. Planning Staff Assumes Role of Initiating/Developing Other Plans as Needed
53. Application of Planning Format for Developing Plans Started
54. Application of Quality-Quantity Checkpoints re Instructional Program Started
55. Facilities Requirements re the Instructional Program Completed
56. Financial Requirements re the Instructional Program Completed
57. Application of Quality-Quantity Checkpoints re Instructional Program Completed
58. Application of Quality-Quantity Checkpoints re Supporting Services for Pupils Started
59. Facilities Requirements re Supporting Services for Pupils Completed
60. Financial Requirements re Supporting Servces for Pupils Completed
61. Application of Quality-Quantity Checkpoints re Supporting Services for Pupils Completed
62. Application of Quality-Quantity Checkpoints re Supporting Services for Staff Completed
63. Facilities Requirements re Supporting Services for Staff Completed
64. Financial Requirements re Supporting Services for Staff Completed
65. Application of Quality-Quantity Checkpoints re Supporting Services for Staff Completed
66. Utilization of Planning Format for Developing Plans Completed
67. Planning Councils' Review Process Started
68. Review by Appropriate Office Planning Councils (OIS, OPS, OAS, Library) Completed
69. Review by Administrative Council Completed
70. Planning Council's Review Process Completed
71. Administrative Council may (A) Recycle or (B) Reject a Plan
72. Based Upon Administrative Council's Recommendations, a Plan May be Implemented
73. Planning Project Completed With Implementation of Planning Process in Department

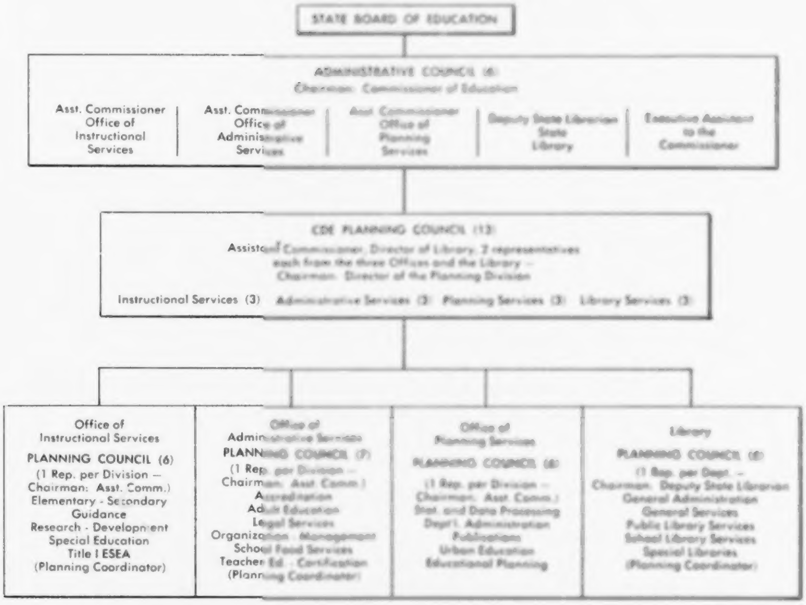
◇V Phase V: Establishing Comprehensive Planning in Local School Districts state level. With appropriate provisions for local needs and resources, the same basic procedures and techniques apply.

The same commitments of leadership, service, and supervision apply. The same rationale is pertinent, i.e., better information, for better evaluation, for better decision-making, for better coordination, for a better instructional program. The instructional program, supporting services for pupils, and supporting services for staff circumscribe educational problems at the district as well as the state level.

Organizing, implementing, and evaluating planning programs at the local level is the key to continuous, comprehensive, and coordinated planning in Colorado. The purpose of state planning is to supplement rather than supplant local planning.

Organization of the
Colorado Department of Education
for Comprehensive Educational Planning

PLANNING COUNCILS AND CHANNELS


STATE BOARD OF EDUCATION
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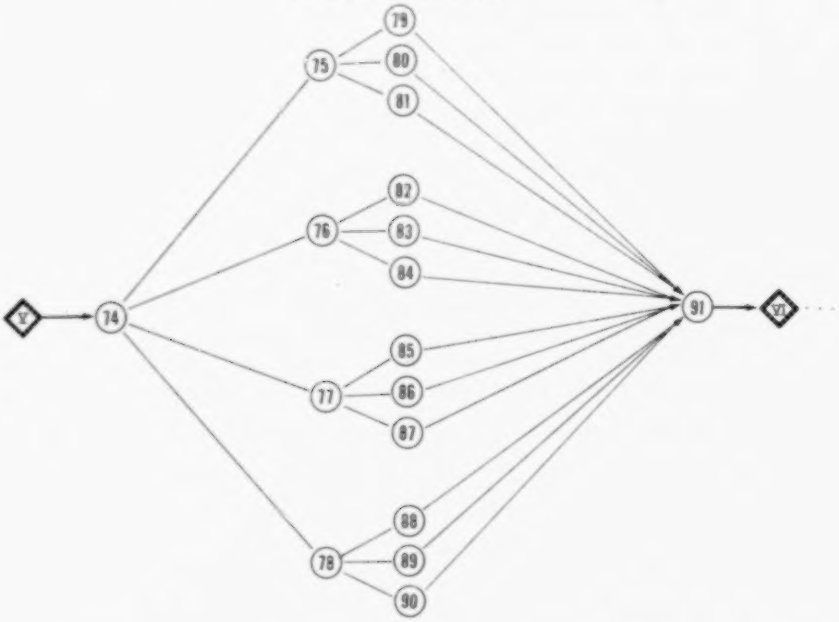
Phase V: Establishing Comprehensive Planning
in Local School Districts



◇ Phase V: Establishing Comprehensive Planning in Local School Districts

74. Assessment of District's Administrative Functions Started
75. Assessment of District' Information System Started
76. Assessment of District's Evaluation Procedures Started
77. Assessment of District's Decision-Making Procedures Started
78. Assessment of District's Coordination Procedures Started
79. Assessment of Information re Instructional Program Completed
80. Assessment of Information re Supporting Services for Pupils Completed
81. Assessment of Information re Supporting Services for Staff Completed
82. Assessment of Evaluation re Instructional Program Completed
83. Assessment of Evaluation re Supporting Services for Pupils Completed
84. Assessment of Evaluation re Supporting Services for Staff Completed
85. Assessment of Decision-Making re Instructional Program Completed
86. Assessment of Decision-Making re Supporting Service for Pupil Completed
87. Assessment of Decision-Making re Spporting Services for Staff Completed
88. Assessment of Coordination re Instructional Program Completed
89. Assessment of Coordination re Supporting Services for Pupils Completed
90. Assessment of Coordination re Supporting Services for Staff Completed
91. Assessment of District's Administrative Functions Completed

◇ Phase VI: Preparation of Planning Materials at the District Level . . . Development of a District-Level Planning Process Adapting Steps as Outlined for Establishing State-Level Planning Process

Organization of the Colorado Department of Education for Comprehensive Educational Planning

ADVISORY GROUPS

RESOURCE ASSOCIATES

A group of consultants "on call" for special consultation — representing such agencies and organizations as the Education Commission of the States, the HEW Region VIII Office, the Colorado Education Association, the Colorado Federation of Teachers, the State Planning Office; and leaders from the business and religious communities and from civic, professional and social organizations.

ADVISORY COMMITTEE OF BOARDS OF COOPERATIVE SERVICES AND INSTRUCTIONAL IMPROVEMENT ASSOCIATIONS

Administrative officers of fourteen Boards of Cooperative Services and of nine Instructional Improvement Associations — representing local school administrators — advising liason personnel assigned from appropriate divisions of the Department.

CDE ADVISORY COMMITTEES

Twenty-one standing committees of the Department — representing a cross-section of teachers, professors, school administrators and lay individuals — advising liason personnel assigned from appropriate Divisions of the Department.

Mathematics - Science - Language Arts - Social Studies - Business Education - Health - Physical Education - Conservation - Outdoor Education - Library - Guidance - Special Education Colorado Council on Instruction - Accreditation - Teacher Education and Certification - Urban Education - Western States Small Schools Project - Designing Education for the Future - Title I ESEA - Title II ESEA - Title III ESEA

Appendix A

QUALITY-QUANTITY CHECKPOINTS:
A RANGE OF EVALUATIVE CRITERIA

A. *Overview*
B. *Planned Instructional Outcomes*
C. *Entrance Requirements and Pupils Served*
D. *Type of School System, School, Program*
E. *Subject Matter, Program, Content*
F. *Instructional Media, Personnel, Materials*
G. *Instructional Methods, Resources, Individualization*
H. *Time and Place of Instruction*
I. *Pupil Progress, Promotion, Graduation*
J. *Supporting Services for Pupils*
K. *Supporting Services for Staff*
L. *School Services for the Community*
M. *Evaluation and Curriculum Improvement*

INTRODUCTION:

In keeping with using this document as a handbook for practical planning, the following quality-quantity checkpoints are included to assist planners in assessing a problem and developing a plan in depth. The checkpoints consist of a highly condensed presentation of the Office of Education's publication, *Standard Terminology for Instruction in Local and State School Systems: An Analysis of Instructional Content, Resources, and Processes* (Third Draft), referred to more briefly as *Handbook VI* of the State Educational Records and Reports Series, 1967. All definitions and their page notations in this section refer to *Handbook VI.*

Quite obviously, not every item under each of the thirteen categories will be relevant for every problem under consideration. However, use of this section has proved that when each entry is tested for its relevance, many seemingly remote considerations do indeed have an intimate bearing on the problem. For example, consider the relevance of such entries as the following with reference to assessing and developing plans to remedy a reading problem in a given class, school, or school system — "Orientation

Practices," "Audio Equipment: Tape Recorder," "Use of Pupil Leadership," "Promotion Period," "Financial Aid Services," "School-Home Planning," and "Pupil Involvement in Curriculum Planning." It is hoped that, by considering the potential significance of each checkpoint, a wealth of new insights and fresh approaches will be suggested to the planner.

A. OVERVIEW

Planned Instructional Outcomes

I Mental and Physical Development
II Social Development
III Intellectual Development
IV Academic and Occupational Development

Entrance Requirements and Pupils Served

I Requirements
II Pupils

Type of School Systems, School, Program

I Type of School System
II Type of School
III Type of Program
IV Level of Difficulty
V Level of Ability Required

Subject Matter, Program, Content

I Subject Matter
II Structure of Program or Course
III Treatment of Content

Instructional Media, Personnel, Materials

I Pupil-Teacher Interaction
II Instructional Equipment and Supplies

Instructional Methods, Resources, and Individualization

I Principal Methods of Instruction
II Major Instructional Resources or Plans
III Grouping for Instruction
IV Provisions for Individualizing Instruction

Time and Place

I Time Schedule
II Location of Instruction

Pupil Progress, Promotion, Graduation

I Evaluation Practices
II Reporting Practices
III Promotion Practices
IV Graduation/Completion Practices
V Other Termination Practices

Supporting Services for Pupils

I Resource Services for Pupils
II Personnel Services for Pupils
III Social Work Services
IV Ancillary Services

Supporting Services for Staff

I Resource Services for Staff
II Personnel Services for Staff

School Services for the Community
- I Information Services
- II Community Services

Evaluation and Curriculum Improvement
- I Background of the Instructional Program
- II Organization for Curriculum Improvement
- III Personnel Involved in Curriculum Improvement
- IV Evaluation Procedures
- V Factors Evaluated in Instructional Program
- VI Curriculum Improvement Activities

B. Planned Instructional Outcomes

I *Mental and Physical Development*

A. Mental Health
("Improved soundness of mental health and overall personality development." 178)

1. Self-Understanding
("Greater understanding of one's abilities, interests, environmental factors, and educational needs." 179)

2. Workable Self-Concept
("A more realistic self-image, incorporating aspects of personal development." 179)

3. Personal Satisfaction
("A sense of reward and pleasure resulting from involvement in an activity and/or from enjoyment of the product or results of the activity." 178)

B. Physical Fitness and Health
(soundness of physical health, muscular strength, physical endurance, kinesthetic skills, resistance to disease)

II *Social Development*

A. Socialization
("Increased understanding and acceptance of the customs, standards, traditions, and culture of the cultural groups of which pupils are members – including groups comprised of the family, school, community, and active cooperation with these groups as appropriate." 179)

B. Acculturation
("Greater capability for pupils of a minority group to assimiliate and to adapt to the general cultural patterns of the community." 176)

C. Appropriate Behavior
("Patterns of acting, thinking, and feeling which are

more consistent with those of selected cultural groups to which the pupils belong, consistent especially with the norms and standards set to govern pupil behavior within the school." 177)

D Social Adeptness
("Greater ease and skill in interpersonal relationships." 179)

E. Moral and Ethical Values
("Greater adherence to the principles of morality and the ethics implicit in the highest ideals of American democracy." 178)

F. Knowledge and Understanding of Citizenship
("Increased knowledge and appreciation of one's rights and responsibilites as a member of his school, community, State ,and nation." 178)

G. Service to Others
("Greater familiarity with the satisfactions, rewards, and problems of providing service to others." 177)

H. Leadership Ability
("Greater ability to serve effectively in leadership capacities . . ." 178)

1. Use of Leisure
("Interests and skills appropriate for pupils' leisure-time activities at the present time and in the future." 177)

III *Intellectual Development*

A. Readiness
("A willingness, desire, and ability to participate in activities related to the subject matter area, depending upon the necessary level of pupils' physical, mental and emotional maturation." 178)

B. Cognitive Thinking
("Greater skill in organizing and utilizing one's intellectual resource for arriving at the most appropriate solutions to problems." 177)

C. Creativity
("Enhanced performance in original and self-expressive activities, including greater facility with inventive thinking that explores original and/or alternative solutions to problems." 177)

D. Literacy
("The ability to read, write, and compute sufficiently well to meet the needs of adult life." 178)

E. Skills of Inquiry
("Greater ease and precision in the use of an appropriate systematic approach for seeking information related to the subject-matter area, including the use of observation, experiementation and questioning." 179)

F. Critical Judgment
("Greater ability to evaluate an idea, situation, or body of information in terms of meaningful (germane)

objective and subjective criteria." 177)

IV *Academic and Occupational Development*

A. General Development in Subject-Matter Areas
("in knowledge, understandings, appreciations, attitudes, and skills . . ." 177)

B. Historical Awareness and/or Background
("Greater awareness of the nature, importance, and relationships of significant historical events affecting the subject-matter area." 177)

C. Knowledge and Understanding in Area
("Greater knowledge of the significant facts, and increased comprehension of the basic ideas . . ." 177)

D. Understanding of Basic Principles
("basic principles underlying the subject-matter area." 179)

E. Appreciations and Attitudes
("A greater awareness of the value and significance of aspects of the subject-matter area (including aesthetic appreciations), and a greater readiness to respond in a mature manner to phenomena related to the area." 176)

F. Skills Associated with the Area
("Greater ease and precision of physical and/or mental performance in activities related to the subject-matter area." 179)

G. Career Guidance
("Greater understanding of one's educational and career opportunities, which leads to formulation of realistic goals." 177)

H. Occupational Competence, Initial
("The skills, understandings, and appreciations needed for successful initial entry into a specific occupation or cluster of closely related occupations." 178)

I. Occupational Competence, Upgraded or Updated

J. Remediation
("Improvement or overcoming on any particular . . . deficiency not due to inferior general ability . . . When referring to the teaching of skills or other aspects of content for the first time, this may be referred to as habilitation. In occupational programs this includes instruction intended to correct educational deficiencies or handicaps which

might prevent pupils from benefitting from their occupational instruction." 179)

K. Rehabilitation
("Restoration to a previously attained state of physical, mental, social, or emotional wellbeing." 178)

C. ENTRANCE REQUIREMENTS AND PUPILS SERVED

I *Entrance Requirements*

A. Requirements and Procedures for Entrance
(into a school, program of studies, self-contained class, course, or curricular activity)
  1. Location of Residence
  2. Age
    a. Span of Compulsory Attendance Ages
      1) Age 1-21
      2) Over 21
      3) No Compulsory Educational Requirement
      4) No Permissive Attendance Provision
      5) No Age Limit
    b. Span of Permissive Attendance Ages
  3. Entrance into School
  (all pupils are eligible to participate)
  4. Previous Attendance at Accredited School
  5. Grade or Year Standing
  6. Successful Completion of Entrance Exam
  7. Achievement in Schoolwork
  8. Enrollment in a Given Program
  9. Course or Courses Previously Completed
  10. Employability
  11. Current Employment
  12. Special Ability, Aptitude, Interest
  13. Special Pupil Need
  14. Recommendation of Teachers, Counselor, and/or Principal
  15. Recommendation of Psychologist
  16. Court Commitment
  (by a judge or court of law, including but not limited to a school located in a correctional institution or detention home)
  17. Availability of Transportation
  (including parental acceptance of responsibility of transportation)

B. Required or Elective Stipulations

1. Required for all Pupils
2. Required for Pupils in Specified Programs
   a. College Preparatory Program
   b. Advanced Placement Program
   c. General Placement Program
   d. Occupational Program
   e. Transfer Program
3. Required for All Pupils in Area of Specialization within a Program
4. Elective for All Pupils
5. Elective for Pupils in Specified Programs

C. Orientation Practices

1. Regarding Facilities
2. Regarding Personnel
3. Regarding Rules
4. Regarding Traditions
5. Regarding Instructional Offerings
6. Regarding Evaluation Procedures

II *Pupils Served*

A. Number of Pupils Served

1. Fall Membership
2. Full-Time Pupils
3. Part-Time Pupils
4. Number of Pupils per Class, Course, Section, or Activity

B. Basis for Selection or Grouping

1. Unselected Grouping ("normal range of pupils in most of the schools, courses, or classes serving a given age group." 152)
2. Selected Grouping
   a. On Basis of Achievement
   b. On Basis of Abilities
   c. On Basis of Interests
   d. On Basis of Physical Development
   e. On Basis of Personality Characteristics
   f. On Basis of Age
   g. On Basis of Sex

C. Sex of Pupils

1. Both Males and Females
   a. Coeducational (attending same classes)
   b. Coordinate attending separate classes)
2. Males only
3. Females only

D. Background of Pupils

1. Race (Negro, American Indian, Eskimo)
2. Ethnic Origin (Mexican-American, Japanese-American, Puerto Rican-American)
3. Religion
4. Non-English Speaking

5. Socioeconomic Background (occupation and education of parents)

E. Characteristics of Pupils

1. Normal Range of Pupils (within normal range of ability and performance)
2. Gifted and Talented ("mentally gifted . . . individuals whose level of mental development is so far advanced that they have been identified by professionally qualified personnel as needing additional educational opportunities beyond what is provided by the usual school program if they are to be educated to the level of their ability" 154 "talented . . . individuals identified by professionally qualified personnel as being capable of high performance in one or more areas of special competence. Among these areas of special competence are intellectual ability, creativity, leadership ability and social adeptness, and facility in the productive and performing arts." 154)
    a. In General Academic Work
    b. In Reading
    c. In Mathematics
    d. In Science
    e. In Industrial Arts and/or Applied Science (including occupational areas, technical or business)
    f. In Human Relationships
    g. In Athletics
    h. In Music
    i. In Arts of Design
    j. In Dramatics
    k. In Dance
    l. In Special Studies
3. Under-Achievers
4. Slow Learners ("in terms of I.Q., those within general range of 75 or 80 to about 90" 154)
5. Mentally Retarded ("In practice, mental retardation has come to mean an intelligence quotient (I.Q.) below about 75 or 80 on validly administered standard individual intelligence tests." 155)
    a. Educable Mentally Retarded ("individuals who are educable in the academic, social, and occupational areas, even though moderate supervision may be necessary. I.Q.'s . . . range from about 50 to 75 or 80." (155)
    b. Trainable Mentally Retarded ("individuals for

whom little or no self-support is anticipated, although some improvement in performance is possible, especially in self-care, social and emotional adjustment, and economic usefulness in the home or a sheltered environment . . . Their I.Q.'s generally range below about 50 or 60." 155)

  c. Custodial Mentally Retarded
  ("individuals for whom neither self-support nor significant improvement in performance is anticipated . . . I.Q.'s below 40 in most cases." 155)

6. Physically Handicapped
   a. Blind
   b. Partially Seeing
   c. Deaf
   d. Hard of Hearing
   e. Speech Impaired
   f. Crippled
   g. Pupils with Special Physical Health Problems
   ("Such a condition might result from chronic illness, emotional disturbance, or environmental causes . . ." 156)

7. Socially and/or Emotionally Handicapped
   a. Emotionally Disturbed
   ("Pupils identified by professionally qualified personnel as having an emotional handicap of such a nature and severity as to require one or more special services . . . institutional care, other profesional treatment or care, and instruction in special classes . . . on a full-time or part-time basis." 156)
   b. Delinquency Prone
   ("identified by professionally qualified personnel as having a strong tendency toward committing acts which are classified as patterns of delinquent behavior." 156)

8. Culturally Handicapped
   a. Culturally Disadvantaged
   (Pupils whose cultural background is so different from that of most pupils that they have been identified by professionally qualified personnel as needing educational opportunities beyond what is provided by the usual school program if they are to be educated to the level of their ability. Cer-

tain types of programs for culturally disadvantaged pupils are referred to as 'compensatory education programs.' " 157)

b. Non-English Speaking
("Pupils whose ability to speak English is so retarded that they are unable to profit from the usual classroom instruction in English." 157)

c. Migrant Children

d. Functionally Illiterate
("Youths and adults who are unable to read and write sufficiently well to meet the needs of adult life." 157)

e. Culturally Different

f. Economically Disadvantaged

g. Disadvantaged

Regional Minority Group

9. Pupils with Learning Disabilities
("the distinguishnig features are (1) the sharp imbalance within the pupils' cognitive development and (2) a marked underachievement." 158)

10. Miscellaneous Characteristics
    - a. Prekindergarten Age
    - b. Former Dropouts
    - c. Employed Youth Under 18
    - d. Pregnant Girls
    - e. Adult Age
    - f. Parents
    - g. Multiple Handicapped

F. Intraschool/Interschool Activities
(cocurricular activities)

1. Intraschool
2. Interschool

D. TYPE OF SCHOOL SYSTEM, SCHOOL, AND PROGRAM

I *Type of School System*

A. A Local School System

1. Common School District
2. City School District
3. Independent School District
4. Consolidated School District
5. Union School District
6. Community School District
7. Town School District
8. Township School District
9. Jointure School District
10. County-Unit School District

B. An Intermediate Administrative Unit ("An administrative unit smaller than the State, which exists primarily to provide consultative, advisory, administrative, or statistical services to local basic administrative units, or to exercise certain regulatory and inspectoral functions. . . . 89)

C. State Department of Education

D. Other State Agencies

1. Commission for Higher Education
2. Commission for Vocational Education
3. Welfare Department
4. A College or University

E. Scope of Central Administration

1. For Entire System
2. For Geographic Areas
3. For Given Level or Type of School
   a. Operates Elementary Schools
   b. Operates Secondary Schools
   c. Operates Area School for Special Education Only
   d. Operates Area School for Vocational or Techanical School Only
   e. Operates Junior College
   f. Provides Adult Education
4. Single School
5. Autonomous
6. Nonpublic Schools
   a. Religious Affiliation
   b. Proprietary (Nonprofit)
   c. Proprietary (For Profit)
7. Combined Public and Nonpublic

F. Contract for Instruction or Service

1. Contract Awarded to Another Agency
2. Contract Awarded to School System, School Agency, or Given School
3. Source of Recipient of Contract
   a. Public School System or School
   b. Other Public Agency
   c. Nonpublic School System or School
   d. Other Nonpublic Agency

G. Approval System

1. Approving Agency
   a. State Department of Education
   b. Other State Agency
   c. Other Agency
2. Approval Status

a. Approved
b. On Probation
c. Approval Denied
d. Approval Available but not requested
e. Approval Not Available
f. Approval Not Applicable

II *Type of School*

A. Elementary School

1. Nursery-Kindergarten ("year or years preceding the primary level." 91)
2. Primary Level ("usually kindergarten or grade one through three or the equivalent." 91)
3. Intermediate Elementary Level ("usually grades four, five, and six or their equivalent." 91)
4. Upper Elementary Level ("usually grades seven and eight or their equivalent." 91)
5. Summer Elementary School

B. Middle School ("usually beginning with grade five or its equivalent and including at least three grades or years. Most middle schools presume . . . a four-year high school . . . as in 4-4-4 or 5-3-4 plan." 91)

C. Secondary School ("A school comprising any span of grades beginning with the next grade following an elementary or middle school and ending with or below grade 12." 91)

1. Junior High School ("usually including grades seven, eight, and nine in a 6-3-3 plan, or grades seven and eight in a 6-2-4 plan." 92)
2. Five or Six-Year High School ("not divided on a junior and senior basis, and is not preceded by a junior high school in the same school system." 92)
3. Junior-Senior High School ("a two-year junior and a four-year senior high school plan, or a three-year junior and a three-year senior high school plan, and any other plan based on a junior-senior organization." 92)
4. Senior High School ("offering the final years of high school work . . . invariably preceded by a junior high school." 92)
5. Four-Year High School ("immediately following the elementary school in an 8-4 plan or middle school. This includes four-year vocational and technical high schools." 92)

6. Incomplete Regular High School (newly organized and will ultimately add grades)

7. Summer Secondary School

D. Junior College ("two-year community colleges, two-year city or municipal colleges, and technical institutes which have, among their program offerings, two years of instruction for college credit." 93)

E. Adult Schools ("A school only for adults and out-of-school youth, or some other separate adult education organizational arrangement within a school system, college, or other agency or institution." 93)

F. Day School

G. Residential School

III *Type of Program*

A. Typical Local Elementary Program

B. Typical Local Junior High Program

C. General Education Program ("designed primarily to prepare pupils for the common activities of men as citizens, family members, and workers, and which is contrasted with specialized education which prepares for an occupation." 94)

D. Provisions for Free Selection ("enabling students to select courses of study without primary concern for . . . interrelationships among courses." 95)

E. Combination of Courses ("A combination or sequence of courses, or segments of subject matter, larger than a single course but smaller than an entire program . . ." 95)

F. Special Education for Handicapped

G. College Preparatory Program (for a four-year liberal arts program, a four-year scientific or engineering program, and a two-year technical program)

H. Advanced Placement Program

I. Occupational Program

J. General Continuation Program ("A part-time class for persons under 18 . . . who have left full-time instruction to enter the labor force – providing instruction designed primarily to increase civic intelligence rather than to develop specific occupational competence." 96)

K. Provisions for Postgraduate Studies
("Provisions within a secondary school, for additional high school study after graduation." 94)

L. Transfer Program
("at the post-secondary instructional level, designed primarily to yield credits . . . normally acceptable by four-year colleges and universities . . ." 95)

M. Rehabilitation Program
(physical, mental, social or emotional)

IV *Level of Difficulty*

A. Average Difficulty
("The level of difficulty appropriate for most of the pupils of the school system of a given age group." 105)

B. Above-Average Difficulty

C. Below-Average Difficulty

D. For Mentally Retarded

V. *Level of Ability Required*

A. Average Ability

B. Above-Average Ability

C. Below-Average Ability

E. SUBJECT MATTER, STRUCTURE OF PROGRAM, TREATMENT OF CONTENT

I *Subject Matter*

A. Subject Matter for a Given Class
  1. Content for All of the Schoolwork of the Class
  2. Content for Portions of Schoolwork within the Class
  3. Content for Portions of Schoolwork outside the Class (music, physical education, art)

B. Subject Matter for a Given Course
  1. Content for All of the Course
  2. Content for Portions of the Course

C. Content of Cocurricular Activity
  1. Content for Entire Activity
  2. Content for Portions of Activity

D. Type of Occupational Program
  1. Occupational Training ("designed primarily to

prepare students for entrance into a specific occupation or cluster of occupations. This includes aspects of programs such as 'prevocational education,' 'vocational education,' and 'cooperative on-the-job training.' " 174)

2. Technical Program
   ("to prepare pupils for work in the occupational area between that of the skilled employee and the professional employee such as the physician, engineer, and scientist." 175)
3. Occupational and/or Technical Retraining Program
   ("This includes aspects of programs such as 'vocational education,' 'cooperative on-the-job training,' and 'Manpower Development and Training' . . ." 174)
   a. Upgrading in Current Occupation
   b. Retraining for New Occupation
4. Apprenticeship Program
   ("for skilled trades as authorized by State and Federal legislation and usually conducted under the auspices of a local joint apprenticeship committee representing labor, management, and the school." 175)

E. Occupational Goal of Students
(See *Dictionary of Occupational Titles*, Third Edition, Washington: U.S. Government Printing Office, 1965)

F. Courses Offered in Program of Studies
   1. Required Courses
      (includes their sequence and grade or year placement)
   2. Elective Courses
      (includes their grade or year placement)

II *Structure of Program or Course*

A. Separate Subjects: Discrete
(without special effort at correlation with other subject-matter areas)

B. Separate Subjects: Correlated
(with special effort at correlation with other subject-matter areas)

C. Broad Fields
(with special effort to combine [fuse] closely related subject-matter areas, e.g. social studies: history, geography, economics, sociology, government; general mathematics: arithmetic, geometry, algebra)

D. Integrated
("at the elementary school level in which subject-matter

area boundaries are flexible, with offerings of a class being taught in relation to broad areas of study and in relation to one another as mutually associated in some genuine relationships." 209)

E. Core Units
("one or two subject-matter areas serve as the center or core to which other subject-matter areas are related; within this plan, a sequence of central problems or units growing out of pupil interests and concerns provides for content and learning experiences. . . . courses having this structure typically meet for two or more consecutive class periods." 209)

F. Combination

III *Treatment of Content*

A. Introduction to Area
("Emphasis on introductory experiences and/or knowledge and/or basic skills . . ." 176)

B. Introduction to Research Methods in Area
("Emphasis on introductory experiences related to the principles and methods of research associated with the subject-matter area." 176)

C. Practice, Application, or Content Enrichment
("Provision, through a co-curricular activity, of opportunity for pupils to put to practice or extend the skills and knowledge acquired through their course work." 176)

D. Study in Depth
"Emphasis on advanced experiences and/or knowledge . . ." 176)

E. Survey of Area
("Emphasis on an organized overview of the most significant aspects of the subject-matter area." 176)

F. INSTRUCTIONAL MEDIA – PERSONNEL, EQUIPMENT, AND SUPPLIES

I *Pupil-Teacher Interaction*

A. Direct Pupil-Teacher Interaction
- 1. In-School Instruction
  - a. Single Teacher
  - b. Team of Teachers
  - c. Sequence of Teachers
  - d. Tutoring
  - e. Independent Study
- 2. Out-of-School Instruction
  - a. On-the-job Supervision

- b. Home and/or Hospital Instruction

B. Indirect Pupil-Teacher Interaction

- 1. Correspondence
- 2. Radio
- 3. Television
- 4. Telephone
- 5. Self-Teaching Materials (programmed text, teaching machine, computer assisted instruction)
- 6. Recordings

II *Instructional Equipment and Supplies*

A. Reading Materials

- 1. Textbooks
- 2. Workbooks
- 3. Study Guides
- 4. Reference Books
- 5. Periodicals
- 6. Newspapers
- 7. Pamphlets and Documents
- 8. Braille materials

B. Visual Equipment and Supplies

- 1. Chalkboards
- 2. Display Boards and Cases
- 3. Projectors
  - a. Motion Picture
  - b. Filmstrip and/or Slides
  - c. Overhead
  - d. Opaque
- 4. Projection Screen
- 5. Globes
- 6. Maps, Graphs, and/or Charts
- 7. Picture Sets and Study Prints

C. Audio Equipment and Supplies

- 1. Record Player
- 2. Tape Recorder
- 3. Dictating Machine
- 4. Radio

D. Audiovisual Equipment and Supplies

- 1. Filmstrips or Slides with Sound
- 2. Motion Pictures (sound)
- 3. Television Receiving Sets
- 4. Television Cameras and Video Tape Recorders

E. Three-Dimensional and Manipulative Equipment and Supplies (objects, models, specimens)

F. For Specific Type of Activity

- 1. Physical Education Equipment and Supplies
- 2. Music Equipment and Supplies

3. Industrial Arts Equipment and Supplies
4. Home-making Equipment and Supplies
5. Science Laboratory Equipment and Supplies
6. Business Equipment and Supplies
7. Art Equipment and Supplies
8. Stage Equipment and Supplies
9. Driver-Trainer Automobiles and Devices

G. Instructional Methods — Resources and Individualization

I *Principal Methods of Instruction*

A. Lecture

B. Demonstration

C. Reading

D. Drill

E. Practice

F. Programmed Instruction

G. Recitation

H. Testing

I. Discussion

J. Seminar

K. Group Work

L. Project

M. Comparative Analysis

N. Diagnosis

O. Problem Solving

P. Laboratory Experience

Q. Experimentation

R. Directed Observation

S. Field Trip

T. Field Experience

U. Shopwork

V. Manipulative and Tactile Activity

W. Modeling and Imitation

II *Major Instructional Resources or Plans*

A. A Textbook

B. A National Guide (The Madison Plan, the Biological Sciences Curriculum Study (BSCS), the Physical Science Study Committee (PSSC)

C. A State Curriculum Guide

D. A Local Curiculum Guide

III *Grouping for Instruction*

A. Basis for Grouping

1. Achievement
2. Abilities

3. Interests
4. Physical Development
5. Personality Characteristics (special class for emotionally disturbed pupils)
6. Age
7. Sex

B. Size of Group
   1. Large Group
   2. Small Group

IV *Provisions for Individualizing Instruction*

A. Individualized Pupil-Teacher Interaction

B. Pupil Participation in Planning

C. Use of Pupil Leadership

D. Individualized Methods of Instruction

E. Individualized Use of Materials and Equipment

F. Individualized Assignments (in quantity and type; according to individual needs, interests, and abilities)

H. TIME AND PLACE OF INSTRUCTIONAL ACTIVITIES

I *Time Schedule*

A. School Year
   1. Regular Term
      a. Semesters
      b. Trimesters
      c. Four Quarters
      d. Months, Weeks, Days
   2. Summer Term
      Months, Weeks, Days

B. Frequency of Service
   1. Annually
   2. Semiannually
   3. Monthly
   4. Weekly
   5. Given Days of Week
   6. Daily
   7. As Required

C. School Day
   1. Number of Sessions Per Day
      ("the period of time during the school day when a given group of pupils is under the guidance and direction of teachers." 113)
      a. Single Session
      b. Double Sessions
         ("A school day consisting of separate sessions for two pupils in the same

instructional space . . ." 113)

- c. Two Overlapping Sessions ("e.g. high school juniors and seniors begin their session at 7:30 a.m. and the freshmen and sophomores begin their session at 8:30 a.m., the session for juniors and seniors ending one hour prior to the time the session ends for the freshmen and sophomores." 114)
- d. Three or More Overlapping Sessions

2. Types of Session
    - a. Full-Day Session
    - b. Half-Day Session
    - c. Curtailed Session ("with less than the number of hours of instruction recommended by the State education agency." 115)
    - d. Alternating Days
3. Time of Day
    - a. Day Time
    - b. Morning
    - c. Afternoon
    - d. Evening
    - e. Before Session
    - f. After Session
    - g. Variable

D. Divisions of Sessions

1. Full Session (Self-Contained Class)
2. Partially Departmentalized Session
3. Uniform Class Periods
    - a. Single Period (classes meet with each teacher or team of teachers for a single period at a time)
    - b. Multiple Periods (Block of Time)
    - c. Combination of Single and Multiple Periods
4. Nonuniform Class Periods (class periods of varying length)
5. Number of Class Periods Per Day
    - a. From one to nine plus
    - b. Irregular
6. Modules
    - a. Uniform Modules
    - b. Varying Modules
        - 1) Varying for Different Courses
        - 2) Varying forDifferent Pupils
    - c. Minutes in Module (less than 10 minutes to 30 minutes plus)
    - d. Number of Modules Per Day (less than 5 to 26 modules plus)

E. Number of Days Per Week
  1. One to seven
  2. Variable

F. Number of School Weeks

II *Location of Instruction*

A. Facility or Facilities
  1. Location in a Given School System
  2. Location in a Given School
  3. Location in School of Another System
  4. Home of Pupil
  5. Hospital
  6. Field Location
  7. On-the-job Location

B. School Facility or Facilities
  1. Regular Instructional Areas
    a. Regular Classroom (permanent walls)
    b. Regular Classroom (movable partitions)
    c. Large Group Instructional Area
    d. Small Group Instructional Area
  2. Special Instructional Areas
    a. Kindergarten Room
    b. Area for Exceptional Children
    c. Home Economics Room
    d. Business Education Room
    e. Distributive Education Room
    f. Shop Area
    g. Music Room
    h. Art Room
    i. Library
    j. Audiovisual Area
    k. Study Hall
    l. Study Carrel
    m. Gymnasium
    n. Auditorium
    o. Laboratory Room (sciences, mathematics, languages, practical or performing arts)
    p. Multipurpose Room
    q. Museum
  3. Outdoor Instructional Areas
    a. Playground
    b. Garden
    c. Swimming Pool
    d. School Camp

I. PUPIL PROGRESS – EVALUATION, REPORTING PROMOTION, GRADUATION, AND TERMINATION PRACTICES

I *Evaluation Practices*

A. What Is Evaluated and Reported

1. Achievement
2. Effort
3. Citizenship

B. Marking Scale

1. Credit
2. Noncredit
3. Letters
4. Numbers
5. Two-Word Scale (pass or fail, satisfactory or unsatisfactory)
6. Standard Words or Phrases (excellent, above average, average, below average, failing, incomplete, needs improvement in . . .)
7. Percentages
8. Descriptive Comments (not according to predetermined wording)
9. Mark Value (Equivalents) for Courses (A=4, B=3, C=2, D=1)
   a. Values Same for Every Course
   b. Values Vary according to Programs
   c. Values Vary according to Courses
   d. Values Vary according to Sections

C. Units of Value or Credit

1. "Carnegie Unit: a year's study in a given subject, of at least 120 sixty-minute hours or their equivalent."
2. Semester Credit Hour
3. Quarter Credit Hour
4. Accomplished Unit: "a measure of performance indicating the satisfacttory completion of a predetermined task or unit of work." 147

D. Units of Time

1. Class Periods or Modules Required per week (e.g., 1-17 class periods, 1-30 modules)
2. Minutes Per Week Required
3. Portion of Regular School Term Required

II *Reporting Practices*

A. Number of Reporting Periods

1. For Regular School Term e.g., 1-8 reporting periods)

2. For Summer School Term

B. Means of Reporting
  1. Report Card
  2. Letter or Note
  3. Parent Conference

C. Mark Point Average (measure of average performance)
  1. Frequency of Computation
  2. Courses Included

D. Honor Roll
  1. Frequency
  2. No Honor Roll

III *Promotion Practices*

A. Type of Promotion Practice
  1. Regular Promotion (a promotion in a graded situation of a grade a year or of a half-grade a semester)
  2. Accelerated Promotion
  3. Probationary Promotion
  4. Nonpromotion (the retaining of a pupil)
  5. Continuous Promotion (the practice of promoting all pupils on the basis of chronological age)
  6. Variable Progress ("In an ungraded situation, the practice of grouping in which individual promotions are based on a number of factors . . . chronological age, intellectual development, achievement . . . physical, social, and emotional factors." 163)

B. Basis for Promotion
  1. Achievement
  2. Intellectual Development
  3. Chronological Age
  4. Social Maturity
  5. Time in Class

C. Promotion Period
  1. Annual
  2. Semiannual
  3. Flexible

IV *Graduation and/or Completion Practices* (for a class, course, program, or school)

A. Requirements
  1. Completion of a Minimum Number of Units
    a. Total Number of Units
    b. Number in Required Courses for Major
    c. Number in Required Courses for Minor
    d. Number in Elective Courses
    e. Noncredit Courses Required

2. General Performance or Achievement ("The attainment of a stated proficiency or the surpassing of a minimum level of general performance in a specified quantity of school work or in specified areas of studies, as indicated by general performance or by achievement on comprehensive examinations in these areas of study." 165)
3. Equivalency Examination ("Satisfactory scores on an examination, offered and/or approved by a state department of education or other authorized agency, intended to provide an appraisal of the pupil's ability or achievement in the subject areas regularly required for high school graduation." 165)
4. Age
5. Duration of Time

E. Recognition
  1. For Completion of Class, Course, or Activity
     a. Awarding Units of Value
     b. Successful Completion, No Units of Value
     c. Certificate of Completion, Attendance, or Participation
     d. Honor Award
     e. Promotion or Advancement
     f. Monogram (school letter)
     g. Letter of Commendation
     h. No Special Recognition
  2. For Graduation or Completion of Program
     a. High School Diploma (sometimes differentiated: academic, general, vocational)
     b. Certificate of High School Equivalency (issued by a state department of education or some other authorized agency certifying that an individual has met the state requirements for high school graduation equivalency by (a) attaining satisfactory scores on an approved examination or (b) earning the required number of credits in an organized program of approved instruction." 166)
     c. Certificate of Completion
     d. Certificate of Attendance
     e. Associate Degree (for successful com-

pletion of a two-year junior college or technical institute program)

- f. Promotion to Next School
- g. No Recognition

V *Other Termination Practices*

A. Types of Termination

1. Suspension
2. Expulsion
3. Probation
4. Recommended Transfer ("Recommendation by members of the school staff to parents of the pupil, or to his guardians or to the pupil himself, that the pupil transfer to another school or withdraw in some other manner from this school, without any subsequent action being taken by the pupil, parent, or guardian." 169)
5. Legal Exclusion (not enrolling a child for legal reasons — referred to as an exempted child)

B. Reasons for Termination

1. Underage
2. Overage
3. Physical Condition
4. Mental Retardation
5. Mental Illness or Behavioral Difficulty

J. SUPPORTING SERVICES FOR PUPILS

I *Resource Services for Pupils*

A. School Library Services

1. Selection, Acquisition, and Preparation of Materials for Pupils
2. Instruction in Use of Library
3. Individual Guidance in Selection of Books and Materials
4. Reference Materials and Services
5. Circulation Services

B. Audiovisual Services

1. Materials, Equipment, and Services for Viewing
2. Materials, Equipment, and Services for Listening
3. Circulation Services

C. Provisions for Textbooks

1. Free Loan Plan
2. Rental Plan
3. Purchase Plan

   4. Combination of Plans

D. Provisions for Supplies (workbooks, notebooks, pencils)

II *Personnel Services for Pupils*

A. Guidance Services

   1. Educational Counseling
   2. Career Counseling
   3. Personal/Social Counseling
   4. Counseling with Parents
   5. Pupil Appraisal Services ("activities, having as their purpose an evaluation of pupil behavior, which are used in administration, instruction, and guidance and which assist in evaluating the purposes and progress of career development and personality fulfillment of individual pupils. Test records and many other materials used for pupil appraisal usually are included in each pupil's cumulative record." 184)
   6. Information Services (of educational, occupational, and personal-social information)
   7. Maintenance and Interpretation of Cumulative Records (including home and family background, physical and medical status, standardized test results, personal and social development, school performance)
   8. Placement Services ("Activities organized to help place pupils in appropriate educational situations while they are in school, in appropriate part-time employment while they are in school, and in appropriate educational and occupational situations after they leave school. This includes . . . follow-up communications with employers . . ." 185)
   9. Follow-up and Evaluation Services
   10. Financial Aid Services (scholarships, fellowships, grants-in-aid, loans, employment, cooperative housing)
   11. Referral for Additional Guidance Services

B. Health Services

   1. Compilation, Maintenance, and Use of Pupil Health Records
   2. Health Appraisal (vision screening, hearing screening, periodic physical examinations, tuberculosis testing)
   3. Nurse Services

4. Provision of Care for Emergencies
5. Inservice Education on Health Services (for teachers and other staff members)
6. Health Counseling for Individual Pupils
7. Communication to Parents about Health Problems of Pupils
8. Dental Services (dental screening, dental care including cleaning, filling of cavities)
9. Psychiatric Services (including activities of the psychologist and the psychiatric social worker)
10. Immunization Program
11. Prevention and Control of Communicable Diseases
12. Adjusting Programs to Health Needs of Individual Pupils
13. Promoting a Healthful School Environment
14. Food Program for Needy Children
15. Referral for Diagnosis or Treatment

C. Psychological Services

1. Administering Psychological Tests
2. Interpreting Psychological Tests
3. Psychotherapy ("A process that takes place when there is a relationship between a staff member as counselor and a pupil as counselee in which the pupil is helped to perceive, clarify, and resolve adjustment problems." 188)
4. Working with Staff Members
5. Referral for Further Diagnosis or Treatment

D. Speech Pathology and Audiology Services

1. Speech Pathology Services
2. Audiology Services

III *Social Work Services*

A. Attendance Services

B. Social Work Services (diagnosing pupil problems arising out of home, school, or community; casework services for the child, parent, or both; interpreting the problems of pupils for other staff members; promoting modifications of the circumstances insofar as the resources of the family, school, and community can be effectively brought to bear)

IV *Ancillary Services*

A. Food Services

1. Regular Meals and Snacks
2. Incidental Meals and Snacks

B. Transportation Services

1. Between Home and School
2. School-Related Field Trips

K. SUPPORTING SERVICES FOR STAFF

I *Resource Services for Staff*

A. School Library Services

1. Selection, Acquisition, and Preparation of New Materials for Instructional Staff
2. Consultant Service to Instructional Staff
3. Guidance in Selection of Books and Materials
4. Reference Materials and Services
5. Circulation Materials and Services
6. Other Library Services

B. Audiovisual Services

1. Consultant Service to Instructional Staff
2. Materials, Equipment, and Services for Viewing
3. Materials, Equipment, and Services for Listening
4. Circulation Services
5. Selection, Acquisition, and Preparation of New Materials
6. Preparation of School-Produced Materials

C. Curriculum Laboratory (includes representative textbooks, curriculum guides, sample teaching units, tests, and selected audio-visual equipment)

II *Personnel Services for Staff*

A. Instructional Supervision Services

1. Assistance in Planning
2. Assistance in Understanding Pupils
3. Assistance in Techniques of Instruction
4. Assistance in Evaluation
5. Assistance in Research Activity
6. Direction of Inservice Education

B. Provisions for Inservice Education
   1. Workshop
   2. Institute
   3. Conference
   4. Seminar
   5. Payment of Expenses to Professional Meetings
   6. Demonstration
   7. Lecture
   8. Committee Project
   9. Group Study Activity
   10. Staff Meetings
   11. School Visits
   12. Helping Teacher Services (one or more staff members assisting one or more teachers improve their teaching)
   13. Inservice via Television
   14. Inservice via Amplified Telephone
   15. College Course
   16. Payment for Tuition
   17. Sabbatical Leave
   18. Leave Without Pay

C. Other Services for Instructional Staff
   1. Health Services
   2. Teacher Aides
   3. Secretarial Assistance

D. Research and Statistical Services
   1. Action Research ("usually concerned with instructional problems for which immediately applicable findings are sought." 195)
   2. Operational Research ("usually concerned with identifying and planning for administrative problems such as projected populations, the number of pupils to be served . . . sometimes referred to as applied research." 195)
   3. Basic Research ("usually based on a theoretical rationale, in which immediate applicability of findings is not of major concern." 195)
   4. Statistical Services
   5. Data Processing Services
   6. Coordination of Information about Individual Schools of the System

L. SCHOOL SERVICES FOR THE COMMUNITY

I *Information Services*

II *Community Services*

("outside the usual elementary, secondary, college, and adult education programs which the . . . school system provides on a continuing basis . . ." 196)

A. Tutoring and Homework Help Program

B. After-School Activities for Pupils

C. Community Recreation Program

D. Library Services to Public

E. Civic Activities (exhibitions, concerts, seminars, lectures)

F. Coordination with Community Agencies
   1. Employment Agencies
   2. Health and Welfare Agencies
   3. Courts of Law
   4. Recreation Agencies

G. Services for Nonpublic School Pupils

H. Facilities Designed for Community as well as School Use

I. Facilities Available for Community Use

M. EVALUATION AND CURRICULUM IMPROVEMENT

I *Background of the Instructional Program*

A. Philosophy of the School System
   1. Concept of responsibility to Community
   2. Concept of responsibility to other educational agencies
   3. Concept of differing needs, interests, and abilities of youth
   4. Concept of learning process
   5. Concept of roles and relationships of pupils, teachers, and administrators

B. Aims of the School System (what the school is attempting to do to meet the needs and interests of its patrons in accordance with its stated philosophy)

C. Policies of the School System (a statement of assessments and value judgments to serve as an operational guide)

D. Goals and Objectives of the School (general and long-range, specific and short-range — to meet the needs of its pupils and patrons in accordance with stated philosophy, aims, and policies of the school system)

E. Characteristics of the Community

1. Populations of the Community
    a. Type: urban, rural; residential, business, industrial.
    b. Composition: age, sex; race, ethnic origin, languages spoken in home; proportion of families receiving welfare assistance; proportion of employed residents commuting, proportion of employed women.
2. Occupational Structure of the Community professional; farm owners or tenants of large-scale operations; proprietors, managers, officials; clerks; skilled workers and foremen; semiskilled workers, farm laborers and other laborers, servant occupations)
3. Educational Level of the Community
4. Problems of the Community (poverty, excessive juvenile delinquency, intergroup tensions, health, insufficent employment opportunities)
5. Needs of the Community (additional employment opportunties, additional recreational opportunities, additional cultural or educational opportunities)

F. School-Community Relationships

1. Community Opinion (of pupils, parents, business, industry, labor; about problems, needs, activities of the community and its school(s); manner in which such opinions are determined)
2. School-Community Planning
3. School-Home Planning

G. Characteristics and Needs of Pupils

1. Intellectual Ability (as obtained from standardized instruments)
2. Exceptionality (see "Entrance Requirements and Pupils Served")
3. School Placement (types of schools; age-grade distribution)
4. Educational and Career Intentions
5. School Performance (distribution of pupils according to courses studied, cocurricular

activities, grade progression, scholarship awards, diplomas, certificates, or degrees awarded)

6. Nonschool Performance (significant activities during school terms or vacations)
7. Postschool Performance (of graduates and dropouts)
8. Mobility/Stability (frequency of transfer into, out of, and within the school system; rate and type of withdrawals; distribution of high school seniors according to number of years in their school system and school)
9. Pupil Needs
    a. Personal needs: peer acceptance, feeling of success
    b. Remediation needs
    c. Guidance needs
    d. Specialization needs
    e. Language needs
10. Pupil Morale ("The characteristic collective feelings and attitudes of the pupils which are of and conducive to, willing and dependable performance and steady self-control." 127)
11. Pupil-Staff Relationships (friendly, supportive, antagonistic)

H. Provisions for Improving the Curriculum

1. Identification of General Aims and Specific Objectives
2. Selection of Appropriate Content and Learning Experiences
3. Identification of Appropriate Methods of Instruction, Means of Evaluation, and Instructional Resources
4. Preparation of Course Guides and/or other Resource Materials
5. Faculty Participation in Planning
6. Encouragement of Innovation: in content, learning experiences, instructional methods, and resources
7. Evaluation: provisions for continuous, methodical study, evaluation, and improvement

I. Provisions for Improving Teaching (See "Supporting Services for Staff")

II *Organization for Curriculum Improvement*

A. Administrative Activity (policy formulation, test selection, and interpretation)

B. Advisory Committee
(from inside or outside the educational profession, to advise regarding selected aspects of the program, with no decision-making powers.)

C. Steering Committee
(generally representative of the various interests involved and responsible for the overall determination, and sometimes for the implementation of policies)

D. Production Committee

E. Workshop

F. Team or Individual Projects

III *Personnel Involved in Curriculum Improvement*

A. Board of Education

B. Administrative Staff

C. Central Instructional Staff

D. School Instructional Staff
(principals, teachers, department heads, librarians, audiovisual personnel, guidance personnel)

E. State Education Agency

F. Regional Accrediting Association

G. Teachers' Organizations

H. Consultants

I. Parents

J. Representatives of Community
(business, labor, religion, education, social-service agencies, youth organizations, other civic organizations)

K. Pupils

IV *Evaluation Procedures*

A. Frequency of Evaluation

B. Methods of Evaluation

1. Observation: informal and/or formal
2. Interview
3. Standardized Test
4. Teacher-made Objective Tests
5. Survey Instruments (questionnaire, rating scale, community opinion polls; follow-up studies of transfers, graduates and dropouts)
6. Locally Developed Criteria
   (standards or norms developed cooperatively by local personnel as bases for quantitative and qualitative judgments)
7. Approval and/or Accreditation Criteria
8. Case-Study Approach
9. Research-Type Study

C. Use of Diagnostic Findings
  1. Comparisons of Current Status or Performance
    a. With Objectives
    b. With Standards or Criteria
    c. With Previous Status or Performance
    d. With Current Status or Performance of Comparable Group
  2. Interpretation of Objectives
    a. Extent of Interpretation
    b. Identification of Needs

V. *Factors Evaluated in Instructional Program*

A. Instructional Content
  1. Scope of Instructional Content
    a. Subject-Matter Areas and Courses
    b. Content Not Subject-Matter Oriented (information about behavioral growth, mental health)
    c. Cocurricular Activities
  2. Relationships of All Instructional Elements (correlation, integration, differentiation, sequence and balance of curricular and cocurricular activities, school and community services)

B. Instructional Resources
  1. Administrative, Instructional, Supporting Staff
    a. Preparation
    b. Experience (in that school system, outside of that system, outside of education)
    c. Certification Status
    d. Nature of Assignments
    e. Numerical Adequacy of Staffing (including responsibility for parent and/or pupil counseling, reports, preparation of materials)
    f. Performance in Assignments
    g. Staff Morale
  2. Services Supporting Instruction (appropriateness, accessibility, adequacy, frequency of use, effectiveness of management)
    a. Resources Services for Pupils (See "Supporting Services for Pupils")
    b. Personnel Services for Pupils (See "Supporting Services for Pupils")
    c. Ancillary Services

(See "Supporting Services for Pupils")

d. Services for Instructional Staff (See "Supporting Services for staff")

e. Community Services

f. Research Services

g. Information Services

3. Facilities (See *Handbook III* O.E. State Educational Records and Reports Series)

4. Equipment and Supplies (appropriateness, accessibility, adequacy, frequency of use, effectiveness of management)

   a. Movable Equipment and Supplies (See "Medium of Instruction . . .")

   b. Provisions for Textbooks (free loan, rental, purchase)

5. Finances

   a. Instructional Budget

   b. Salaries and Salary Schedule

6. Community Resources (facilities, agencies, business, personnel)

C. Instructional Processes

1. Medium of Instruction (See "Medium of Instruction . . .")

2. Methods of Instruction (See "Methods of Instruction . . .")

3. Grouping Practices (age, sex, ability, achievement, program of studies)

D. Span of Time, Grades, or Levels

VI *Curriculum Improvement Activities*

A. Scope of Activities

1. Planning for Curriculum Improvement

2. Inservice Education and Supervision (See "Supporting Services for Staff")

3. Development of Materials

   a. Statement of Philosophy

   b. Statement of Policy

   c. Statement of Needs

   d. Statement of Aims and Objectives (types of experiences to be provided, subject matter to be covered, desired behavioral outcomes such as skills, knowledge, understandings, appreciations, attitudes, habits)

   e. Outline of Subject Matter

f. Outline of Learning Experiences
g. Outline of Teaching Procedures
h. List of Resources for Instructors
i. List of Resources for Pupils
j. Evaluation Procedures

Appendix B

FORMS FOR SUBMITTING PLANNING PROPOSALS IN THE COLORADO DEPARTMENT OF EDUCATION

A. *Title Page*

B. *Format for Submitting Plans*

C. *Format for Reviewing Plans* by
   1. The Office Planning Councils
   2. The Departmental Planning Council
   3. The Administrative Council

INTRODUCTION:

As explained in Chapter IV, the Colorado Department of Education is composed of four offices — Instructional Services, Administrative Services, Planning Services and the State Library — each of which is subdivided into several divisions. Office Planning Councils were established for vertical or *intra*-office coordination, and the Departmental Planning Council was established for horizontal or *inter*-office coordination. All plans are reviewed first by the Planning Council of the office in which they originate and then by the Departmental Planning Council. Plans accepted by the Departmental Planning Council are then submitted to the Administrative Council for final approval by the Commissioner.

To facilitate some uniformity in submitting and reviewing proposals, planners and reviewers are asked to use the forms included in this Appendix. The procedures are meant to be descriptive rather than prescriptive.

Title Page: Provisions are made for submitting a "Preliminary Draft" rather than a "Final Draft" so that the feasibility of further developing a given idea may be reviewed before an undue amount of time and effort is expended. Whether or not to submit a "Preliminary Draft" is left to the judgment of the planner.

Format for Submitting Plans: The detailed considerations of the "Quality-Quantity Checkpoints" of Appendix A are basic to the development of a plan. The planner is expected to apply the "Quality-Quantity Checkpoints" and to account for the interrelationship of 1) the instructional program, 2) supporting services for pupils, 3) supporting services for staff, 4) materials-equipment-facilities, and 5) finances.

Format for Reviewing Plans: Review forms are provided for use by the members of the Office, Departmental, and Administrative Councils. After each meeting of a planning council, a composite review sheet is appended to the plan for the purpose of providing both the planner and subsequent reviewers with a written account of the recommendations and the plan's status. At each step, the planner has the option of accepting the recommendations and amending his plan accordingly, or of rejecting a recommendation and submitting in writing his reason for doing so. Note that a plan cannot be rejected until after it has been reviewed at the Departmental or inter-office level. This provision is made to insure Department-wide dialogue for generating new insights and new ideas.

A. TITLE PAGE

Title of Plan: ____________________

Brief Statement of Plan: ____________________

Submitted To: ____________________

Submitted By: ____________________

Type: Preliminary Draft ________ Final Draft ____________

Date Submitted: ____________________

B. FORMAT FOR SUBMITTING PLANS

Preliminary Draft (Optional)	*Final Draft*
Section 1: Identify and support *Needs* for improvement.	Section 1: Identify and support *Needs* for improvement.
Section 2: Describe anticipated *Changes* and expected *Outcomes.*	Section 2: Describe anticipated *Changes* and expected *Outcomes* — in terms of a) the program b) supporting services for students c) supporting services for staff d) materials, equipment, and facilities e) finances
	Section 3: Describe *Procedures* to bring about desired improvements—in terms of Departmental personnel, time, and funds.
	Section 4: Describe *Evaluation* procedures.
	Section 5: Budget.

C. FORMAT FOR REVIEWING PLANS

1. REVIEW FORM FOR OFFICE PLANNING COUNCILS

Criteria for Review:

a. Are anticipated changes and expected outcomes closely related to stated needs?

b. Have Departmenal resources (personnel, time, and funds) been adequately specified?

c. Have adequate provisions been made for evaluation before, during, and after the project?

d. To what extent have related personnel been involved and current activities or plans of a similar nature been coordinated?

Action Taken:

Recommended as Proposed _____ Recommended with Modifications _____ Not Recommended __________

Recommended Modifications: ______________________________

Other Comments: ______________________________

2. REVIEW FORM FOR DEPARTMENTAL PLANNING COUNCIL

Criteria for Review:

a. Are anticipated changes and expected outcomes closely related to stated needs?
b. Have Departmental resources (personnel, time, and funds) been adequately specified?
c. Have adequate provisions been made for evaluation before, during, and after the project?
d. To what extent have related personnel been involved and current activities or plans of a similar nature been coordinated?
e. Have recommended modifications been made, or has an adequate explanation been given for not making them?

Action Taken:

Recommended as Proposed ______ Recommended with Modifications _____ Rejected __________

Recommended Modifications: ______________________________

Other Comments: ______________________________

3. REVIEW FORM FOR ADMINISTRATIVE COUNCIL

Criteria for Review:

a. Are anticipated changes and expected outcomes closely related to stated needs?
b. Have Departmental resources (personnel, time, and funds) been adequately specified?
c. Have adequate provisions been made for evaluation before, during, and after the project?
d. To what extent have related personnel been involved and current activities or plans of a similar nature been coordinated?
e. Have recommended modifications been made, or has an adequate explanation been given for not making them?

Action Taken:

Accepted as Proposed ______ Accepted with Modifications ______ Rejected

Recommended Modifications: ______________________________

Other Comments: ______________________________

Comprehensive Planning in State Education Agencies

PART V

TOWARD COMPREHENSIVE EDUCATIONAL PLANNING IN TEXAS

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1968

TEXAS EDUCATION AGENCY
Austin, Texas

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CHAPTER 1

Toward Comprehensive Educational Planning in Texas

INTRODUCTION

The efforts of the Texas Education Agency to develop comprehensive educational planning have been greatly assisted by the Seven-State Project for Comprehensive Planning in State Education Agencies, funded under Title V of the Elementary and secondary Education Act of 1965.

Texas' specific involvement in the Seven-State Project, strictly speaking, was a project to develop and coordinate a system of twenty (20) regional Education Service Centers as a part of the total effort toward comprehensive educational planning in the State. However, other related planning operations were substantially affected by Texas' participation in the Seven-State Project. These other related planning activities also had significant impact on the development of the Education Service Centers. Some of these planning activities had begun before Texas entered the Seven-State Project; others have developed subsequent to, and partly because of, participation in the Seven-State Project.

Therefore, the specific project to develop and coordinate the Education Service Centers, plus several other related efforts toward comprehensive planning, are treated in this document as Texas' total involvement in the Seven-State Project.

Most of the staff of the Texas Education Agency is involved in the planning processes described here. However, the Office of Planning and the Office of Education Service Centers are the two central components within the Agency with specific responsibility for coordination of all efforts at comprehensive planning.

Although there is no specified time toward which one can point and say, "Comprehensive planning in Texas began with this event," our conscious efforts to move toward more comprehensive planning received a powerful boost with the establishment of the Office of Planning. Because comprehensive planning cannot be developed in isolation, it seems appropriate to present a brief summary of pertinent background information about Texas. The purpose of the following information is to reveal some of the factors which have had an important influence on educational planning in Texas.

BACKGROUND INFORMATION ON TEXAS

Texas is a growing State. This growth is evident, of course, in its school population. The 2.3 million pupils in average daily attendance in 1966-67 represented approximately 50 percent gain in a decade.

Now a multi-ethnic State of 11 million people, Texas has two large minority groups which are unequally distributed throughout the State. The 1960 census indicated that Mexican-Americans, who make up 15.1 percent of the total population, are largely concentrated along the border in South and West Texas. Negro-Americans, who comprise 13 percent, are largely concentrated in East and Central Texas.

Texas is a multi-lingual State, with both the attendant advantages and disadvantages. Although German, Czech, French, or Polish may be heard in various parts of the State, Spanish is the predominant second language. Many Mexican-American children enter school with little or no facility in speaking English.

Mobile Population

Texas has a mobile population. It has the largest number of homebased migrant workers of any State. But farm workers account for only part of the mobility. Rapid industrialization has drawn thousands from the farms to the cities.

Within the last half century Texas has shifted from a rural to an urban population and from an agrarian to an industrial economy. With industrialization, job opportunities in Texas are changing. The State's total work force is expanding, but not all industries are growing at similar rates. It has been estimated that during the decade 1960-70 the demand for the technical workers will increase by 40 percent and for skilled and service workers by 20 percent, while the demand for unskilled workers will remain static. With a steady trend toward mechanization of agriculture, the demand for farmers and farm workers will decrease by 15 percent. For Texans with little or no education, this trend paints a dark picture.

For all of her citizens, regardless of race, economic status, place of residence, or handicap, Texas is committed to full educational opportunities. Every person in Texas must be able to acquire basic educational skills – to develop occupational or vocational skills that will ensure productive living; to develop civic and social skills, understandings, and attitudes that will lead to full participation in both the responsibilities and the privileges of American citizenship; and to improve in physical and mental health and individual development. But in spite of this commitment to full educational opportunity, there are difficulties which must be overcome before this promise can become reality.

VARIATION IN DISTRICT SIZE & CAPABILITY

Texas' more than 1200 school districts reflect the diversity of her population and her geography. Four counties – Dallas, Harris, Tarrant, and Bexar – each have more than 150,000 student's scholastics; 40 percent of Texas' pupils are in these four counties. Sixty-five counties each have fewer than 1,500 student's scholastics.

One hundred and two Texas districts receive aid under the sparse unit formula which provides additional State assistance for any school district of 100 square-miles or more having fewer than one pupil per square mile. Although there are State aid formulas to help such districts as these, there are no special allocations for big city systems which are educating the bulk of Texas' students.

However, inequities in finance are but a part of the reason some schools are unable to provide the quality of education desired.

Although Texas' 122,000 teachers rank among the very highest in the nation in the number who hold degrees, the supply of qualified teachers varies considerably from one section of the State to another. A recent survey indicated that over 50 percent of the 12,295 emergency teaching permits issued in Texas were issued in five Education Service Center regions. The following counties in these regions account for the greatest concentrations of emergency permits: Bexar County (San Antonio is the largest district), Dallas County; El Paso County, Harris County (Houston is its largest school district), and Hidalgo County (a border county with 50 percent Mexican-Americans).

In addition, the supply of qualified teachers available for specialized programs is limited. For example, a majority of the 373 teacher units in special education which had to be cancelled in September 1967 were cancelled because teachers could not be found. The most recent evaluation report of programs supported under Title I, ESEA, reveals that local school officials could not locate all of the personnel needed and that some of those hired lacked adequate training. Two areas of need were especially significant — teaching English as a second language and teaching of reading. In part, the difficulty in filling positions in these areas may be due to the shortage of formal undergraduate programs in Texas for training teachers of Mexican-American children and the small number of training programs preparing reading teachers.

Instructional programs in some Texas schools may be limited in number or quality. For example, occupational training programs designed for the pupil with academic, social, economic, or other handicaps are available in only 5 percent of the school districts. Adult Basic Education programs have barely begun to solve Texas' illiteracy problems. To date these programs have reached fewer than three percent of those eligible to enroll. There are no State-supported public school kindergartens in Texas, although there are some very fine State-supported programs for preschool children with special needs.

These data and conclusions about the state of the art of public education in Texas, to cite but a few of the conditions constantly demanding planning and management attention, require a studied and thoughtful approach to comprehensive planning in order to achieve optimal results from application of all available resources.

EDUCATIONAL PRIORITIES

The preceding information has led to the identification of the following nine priority areas of concern for education in Texas:

- Programs for educationally disadvantaged people
- Educational programs for handicapped children, youth, and adults
- Language skills development, particularly among the children who speak with inadequate command of standard English
- Vocational education programs as they relate to business and industrial requirements regionally and statewide
- Early childhood education programs
- Adult basic education programs, particularly as they relate to occupational skills development
- Programs for the individualization of instruction
- Comprehensive pupil appraisal
- School manpower development, both preservice and inservice

Immediate targets of highest priority planning in each of these nine priority areas will be the large urban centers of the State. These nine areas of concern will be reviewed continuously in each of the twenty regions of the State for the purpose of reassessment and modification.

CLIMATE FOR COMPREHENSIVE EDUCATIONAL PLANNING

There exists today a climate in education that is conducive to comprehensive planning. The nature of the climate is increasingly demanding that educational programs be coordinated and comprehensively planned to obtain maximum results for the resources expended. It appears that education is becoming big business, funded like big business, and required to operate on the basis of planning and management procedures which large business enterprises have found necessary.

Several developments in Texas and in the nation have contributed to this climate for comprehensive educational planning:

- In 1967, the Sixtieth Texas Legislutare authorized the establishment of twenty regional Education Service Centers in the State. The major functions of these Centers are to conduct regional planning within a broad state framework, to assist local school districts in planning and strengthening their educational programs, and to provide services which local districts cannot effectively and efficiently provide for themselves. (See Chapter 3 for the details of the development of the Centers.)
- Earlier the Fifty-ninth Legislature had enacted legislation which also had implications for comprehensive educational planning in Texas. First, the Legislature had established the Governor's Committee on Public School Education to make a pervasive study of Texas schools and to submit findings and recommendations to the Legislature in 1969. Secondly, the Legislature had established the Planning Council for Texas – PACT – as a division of the Governor's Office, designed to involve all State agencies in comprehensive planning.
- The United States Office of Education, based upon Section 803 of Title VIII, ESEA, has taken action to bring about coordination of programs which it administers and has encouraged state departments of education to design procedures for coordination and integration of Federal

programs which are now administered separately. On the basis of this encouragement, and with assistance from consultants of the United States Office of Education, the Texas Education Agency has developed a design for comprehensive packaging and planning of Federally-assisted educational programs.

- Title V of the Elementary and Secondary Education Act of 1965 provided funds to strengthen State departments of education. This assistance enabled the Texas Education Agency to establish the Office of Planning. The work of the Office of Planning in providing leadership for change is discussed in this report.

DEFINITION: COMPREHENSIVE EDUCATIONAL PLANNING

When the Office of Planning was established within the Texas Education Agency in April of 1966, the achievement of comprehensive educational planning was one of its stated goals. However, it soon became evident that comprehensive planning is an abstract term which would include the consideration of all relevant factors projected over an infinite period of time; it is the end of a continuum which can never be reached.

Although totally comprehensive planning is never achieved, what is achievable is to move from less comprehensive planning toward more comprehensive planning.

"Comprehensive Educational Planning," as the term is now used by the Texas Education Agency, is considered to have three dimensions:

- length – long-range planning
- width – inclusiveness of relevant factors and interested people
- depth – intensity and sophistication of planning

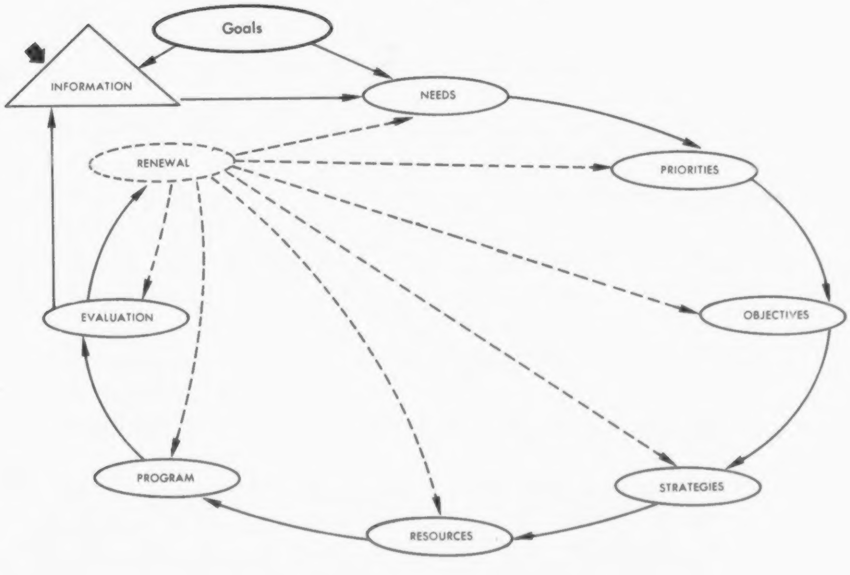
We believe that the extent to which planning may be considered to be comprehensive along these dimensions can be judged by:

- scope of expected outcomes
- the number of operations in the planning process
- the number of people involved in planning

- the development of an array of alternative strategies, or approaches, and the extent to which these alternatives are truly viable approaches
- the combinations of resources to implement strategies
- the level of sophistication with which techniques for dealing with data processing, evaluation, simulation, and decision making are employed
- the provision for evaluation and renewal as essential parts of a continuous cycle. (See Chart #1.)
- the degree of flexibility in the planning; the provision for changing existing plans or replacing them with new plans when evaluation indicates such changes are needed
- the extent to which planning is projected beyond the immediate time span in which the operations are to be performed; the extent to which long-range planning is developed

CHART No. 1

PLANNING CYCLE



CHAPTER 2

Design for Agency-Wide Planning

OFFICE OF PLANNING

In the summer of 1965, after a series of conferences and other long-range planning activities, the staff of the Texas Education Agency undertook a self-evaluation to determine present status and future needs. The U.S. Office of Education bulletin, *Resources of State Education Agencies, a Program Analysis*, provided a guide. Particular emphasis was given to ways in which leadership to local schools could be improved to assist them in the development of educational programs to meet the needs of all pupils. Attention was directed to Agency programs, operational procedures, utilization of resources, and the professional competencies of the staff.

With this assessment as the basis, a series of project proposals under Title V of the Elementary and Secondary Education Act of 1965 was developed by the Agency for the purpose of enlarging the Agency's capacity to meet the educational needs of the State. Priorities were established and proposals beamed at the areas of the State Department of Education indicated by the study as being most in need of strengthening. The first of these proposals was for Educational Innovation and Assessment.

Among the major needs to be met by this proposal were

- coordination of the instructional planning and evaluation of the 23 divisional programs administered by the Agency
- evaluation of instructional programs and assessment of outcomes in terms of identified goals
- development of new approaches for meeting the needs identified from results of research and from innovation
- development of realistic measurement of educational outcomes
- cooperation with other educational institutions in educational research and demonstration projects
- translation of pertinent findings from research into action programs for immediate use in the classroom

- administration of the State's leadership responsibility for Title III of the Elementary and Secondary Education Act of 1965, and
- dissemination of information to Agency and local school personnel and the lay public.

As a first step in carrying out these major responsibilities, an Office of Innovation and Assessment was established within the Commissioner's Office in April of 1966. The specific charge of the Office was to coordinate Agency-wide planning, innovation, and assessment of all educational programs. For two months this infant office was known as the Office of Educational Innovation and Assessment. Because its primary mission was coordination of Agency planning, its name was subsequently changed to Office of Planning and its chief officer became the Associate Commissioner for Planning. (See Chart # 2). Already the Office was undergoing change in response to need.

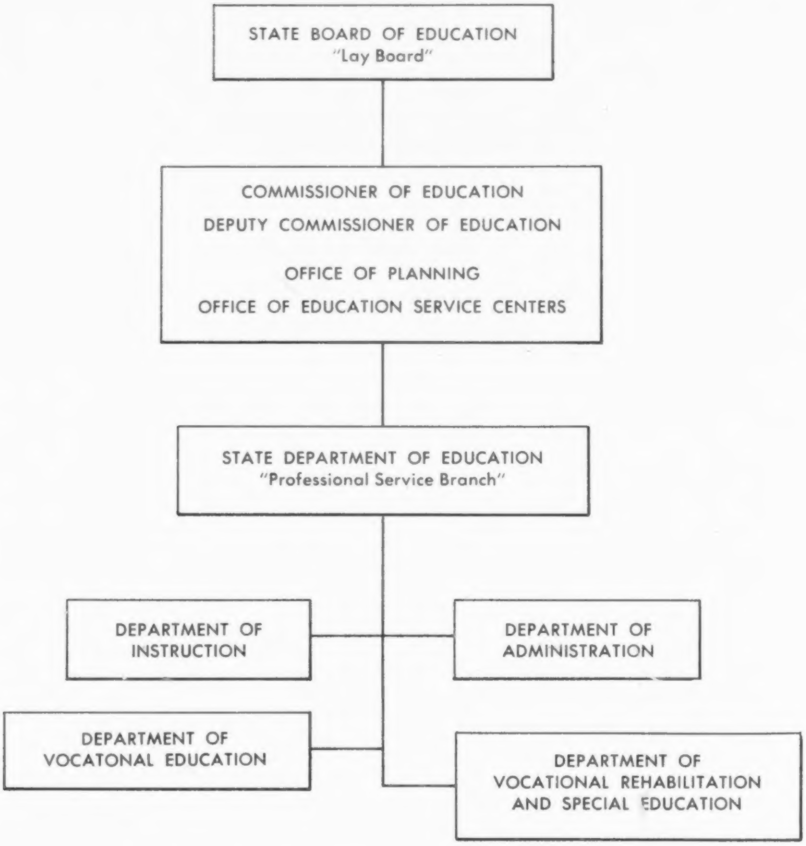
The Office of Planning was given two major functions: First, as the name implies, the Office was to coordinate the planning activities of all Agency programs relating to instruction – academic, vocational, compensatory, special, and adult. In carrying out this responsibility, it was to concern itself with establishing any necessary administrative structures and channels of communication. Second, the Office of Planning was charged with providing leadership for developing change-oriented projects under Title III, ESEA, legislation which was designed to foster educational innovation. This responsibility implied another – disseminating information to interested publics about the progress of Title III projects in Texas. If funds available under Title III were to be used as an instrument of desirable change in educational practice in the State, the results of its projects would need to become widely known. This led to a third responsibility: ensuring competent evaluation of each Title III project.

From the beginning the Office was to see itself as a catalytic agent – a producer of change. Once a planning mission was accomplished, the operation of the program was to be relinquished to other divisions and departments.

The first task of the newly created Office as it sought to bring about educational change was to establish machinery to facilitate Agency-wide instructional planning. It was emphasized that each department, division, and professional staff member of the Agency has an essential role in instructional planning.

CHART No. 2

TEXAS EDUCATION AGENCY


STATE BOARD OF EDUCATION
"Lay Board"
COMMISSIONER OF EDUCATION
DEPUTY COMMISSIONER OF EDUCATION
OFFICE OF PLANNING
OFFICE OF EDUCATION SERVICE CENTERS
STATE DEPARTMENT OF EDUCATION
"Professional Service Branch"
DEPARTMENT OF INSTRUCTION
DEPARTMENT OF ADMINISTRATION
DEPARTMENT OF VOCATONAL EDUCATION
DEPARTMENT OF VOCATIONAL REHABILITATION AND SPECIAL EDUCATION

PURPOSES OF AGENCY-WIDE PLANNING

The purposes of Agency-wide instructional planning are global in scope. Among them are the following:

- *To meet oncoming change,* to cause desirable change, and to prevent undesirable change in public school education
- *To facilitate* the *development* of staff *competence* in inventing, designing, piloting, demonstrating, evaluating, and disseminating educational innovations in keeping with educational needs and goals of the State

- *To coordinate instructional planning* among departments and divisions of the Agency to assist schools in achieving a quality instructional program
- *To provide a structure* for continuous *evaluation* and *assessment* of public school programs and of the Agency's instructional planning capability
- *To facilitate communication* between the Agency, the educational community, and the public

PLANNING MECHANISM

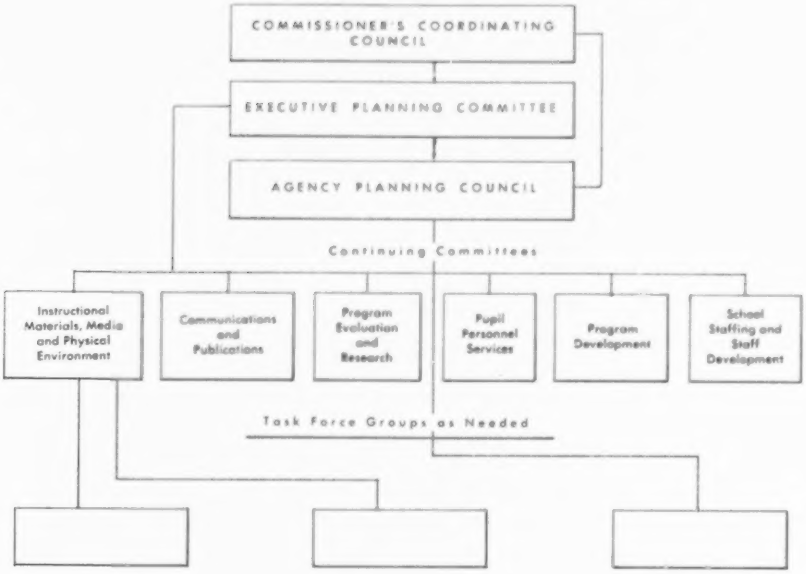
Each major planning effort has involved a broad scale of Agency staff participation. Although specific responsibilities of each of the program divisions within the Agency vary, certain functions are common to them all, such as need identification, program planning and development, staff development, evaluation, research, and communication. A structure was needed to give the professional staff who shared these common functions opportunities to think and work together in fruitful new ways. The design for Agency-wide coordination of instructional planning emerged to meet this need.

Under this design, the Associate Commissioner for Planning is responsible for assisting the Commissioner, Deputy Commissioner, Assistant Commissioners, division directors, and educational program directors in the functions of research, planning, program evaluation, and communication through the following channels: (See Chart #3.)

1. A *Commissioners Coordinating Council*, composed of the Commissioner, Deputy Commissioner, Associate Commissioner, five Assistant Commissioners, and the Investment Officer. In addition the directors of Internal Management, Personnel Administration and Staff Development, the Division of Innovation and Communication and the State Coordinator, Bilingual Education, meet with the Council.
2. An *Executive Planning Committee* consisting of directors of major Agency divisions.
3. An *Agency Planning Council* composed of program directors and selected consultants.
4. Continuing committees and task force groups.

CHART No. 3

PLANNING CHANNELS


COMMISSIONER'S COORDINATING COUNCIL
EXECUTIVE PLANNING COMMITTEE
AGENCY PLANNING COUNCIL
Continuing Committees
Instructional Materials, Media and Physical Environment
Communications and Publications
Program Evaluation and Research
Pupil Personnel Services
Program Development
School Staffing and Staff Development
Task Force Groups as Needed

COMMISSIONERS COORDINATING COUNCIL

A brief examination of the role of the Office of Planning in each of the planning groups is in order. Staff from the Office are assigned to planning activities. The Associate Commissioner is executive officer of both the Commissioners Coordinating Council and the Executive Planning Committee. As such he is responsible for preparing agendas, conducting meetings, and disseminating results to Agency staff.

The Commissioners Coordinating Council meets twice a month. A quick perusal of recent agendas for these meetings reveals that the group has been concerned with items such as:

- Report of Task Force on Educational Manpower Development
- Consolidated Application for Packaging of Federal Funds
- Texas Statewide Design for Educational Manpower Development
- Agency operating procedures proposed by the Executive Planning Committee

The purposes of this planning body are to —

- establish objectives for instructional planning
- assess programs and plans of each department and division
- allocate Agency resources to instructional planning
- coordinate the Agency's instructional planning functions with planning by other agencies

The Council recently formulated three high priority goals for the Agency to work toward:

- develop an adequate supply of highly competent educational manpower
- enhance the role of the Education Service Centers in State and local planning
- design of Agency organization according to major functions to be performed

EXECUTIVE PLANNING COUNCIL

Interacting with the Commissioners Coordinating Council in its planning activities is the Executive Planning Committee, made up of 25 directors of major divisions.

This group also meets twice a month. Again a quick review of agendas indicates that these planners have discussed such items as

- Educational Manpower Development Priority
- Bilingual Education Task Force Membership
- Scripts for Agency Television Briefing Capsules
- Proposed Operating Procedures

The similarity in agenda items exists because plans may originate in either body and many of those considered by the Executive Planning Committee are sent on for approval to the Commissioners Coordinating Council. It's possible to track the development of an idea from tentative beginning to full implementation by scanning the agendas of these two groups.

The Executive Planning Committee purposes include:

- identification of problems or tasks that may need coordination of instructional planning

- review and refinement of reports submitted by instructional planning groups
- evaluation of processes for instructional planning and recommendation of changes in the Agency machinery for planning

For future reference and to keep members of both groups informed of actions, written reports of all meetings are prepared by the Office of Planning. Because these summaries are valuable communication tools, copies are sent to all members of the top echelon planning groups and to chairmen of Continuing Committees and Task Forces. Directors and program directors are responsible for seeing that their staff members are informed.

Agency Planning Council

A third planning group has undergone modification in the light of experience. Changes have been made in membership, role, and function of the Agency Planning Council. The Council has reviewed its role as a planning body. A small steering committee composed of five members was elected by the Agency Planning Council to seek ways to strengthen the APC's contribution to planning. The APC is a large group. Its membership reflects a broad cross-section of Agency middle management.

Continuing Committees. Six continuing committees were established as components of the planning mechanism to facilitate coordination for agency-wide instructional planning and to assure continuity in the planning function. These committees representing the functions shared by all program divisions were established by the Associate Commissioner for Planning on recommendation of the Commissioners Coordinating Council and the Executive Planning Committee. These committees are:

- Instructional Materials, Media and Physical Environment
- Communications and Publications
- Program Evaluation and Research
- Pupil Personnel Services
- Program Development
- School Staffing and Staff Development

Membership on each committee cuts across divisional lines. The Committees are chaired by leaders from throughout the Agency. Because the Office of Planning is responsible for coordinating the work of the committees, each group includes a representative from the Office of Planning. The chairmen schedule the meetings, decide on the agenda, and prepare summary reports of the actions taken.

Products of these planning committees have ranged from the development of procedures to coordinate Agency publications to drawing up position papers which guided the regional Education Service Centers in setting up their programs of services. These position papers were used broadly by the Regional Centers as guidelines in formulating functions and organizational patterns for the Centers.

The committees were not established as the final answer to coordination of planning. They were established as one means of bringing together staff concerned with similar functions to discuss and plan for these functions together, to raise significant questions and to seek answers. As Agency structure evolves in light of new demands, so too will the mission and design of the continuing committees.

TASK FORCES

The final groups in the hierarchy of planning structures have been among the most active — Task Forces, the groups that really get the specific planning jobs done.

Members of planning task forces are selected by the Executive Planning Committee and approved by the Commissioners Council. Task force groups are assigned relatively short-range planning tasks. Upon completion of the assigned responsibility, task force groups report to the appropriate planning body and a report is usually forwarded to the Commissioners Council for final action.

Major thrusts in Agency planning are indicated by review of titles of just a few of these task forces assigned to date:

- Task Force on Regional Education Service Centers
- Task Force for Development of a Unified Plan for Preschool Programs, including Kindergarten
- Task Force for Pupil Diagnostic Services
- Task Force for Bilingual Education
- Task Force on Careers in Health Development
- Task Force for Educational Personnel Development
- Task Force for Packaging Federal Funds as a Step Toward Comprehensive Planning

This represents only a few of the task forces at work. Again, work of the task force groups is coordinated by the staff of the Office of Planning.

AN EXAMPLE OF THE WORK OF A TASK FORCE

From its inception, the Office has seen the development of regional Education Service Centers as one means of strengthening education and bringing about educational change in Texas. Early in September 1966 the Executive Planning Committee, under the leadership of the Associate Commissioner for Planning, began a study of the educational services which could best be provided regionally. Staff from a number of divisions were appointed to a Task Force to carry forward the planning. Their efforts culminated in the implementation of the twenty regional centers and the establishment in the Agency of the Office of Education Service Centers. An Assistant Commissioner was assigned to direct this new function. This was a good example of modification of Agency structure to fulfill emerging functions. A more detailed account of the origin and development of Education Service Centers is given in the following chapter, "The Development of Education Service Centers in Texas."

Having completed its work, the Task Force was disbanded. It had identified a series of needs, gathered information, and proposed solutions. The decision makers in the agency had acted on the recommendation which ultimately resulted in the establishment of the service centers. The planning group had completed its task of designing, and the operational responsibility was assigned to the newly established Office of Education Service Centers. The development and function of the Regional Educational Service Centers are described more fully in Chapter III.

TASK FORCE ACTIVITIES

Recently a task force group was appointed to study the whole matter of educational personnel development – both in the Agency and in local school districts. This task force, assigned under the direction of the Office of Planning, developed a Statewide Design for Educational Personnel Development. The design was approved and the Agency established an Educational Personnel Development Coordinating Unit within the Office of Planning. Once again, the plans developed by a task force lead to the initiation of a new program.

Still another task force functioned throughout the spring of 1968 drawing up a statewide design for packaging Federally-assisted programs as a step toward comprehensive educational planning. Under the leadership of the Deputy Commissioner and the Associate Commissioner for Planning, the task force first developed a statewide design, then planned the consolidated application for funds and the guide for preparing the application. Finally, task force members headed up teams to present the packaging program to local school districts. Part of the work that this task force began will now be carried out by a new Agency division – the Program Funds Management Division. Other follow-up activities will include the development of the coordinating unit which will provide leadership for the Statewide Design for Educational Personnel Development. Again, one structure was developed for planning, others are emerging for implementation of the plans.

Additional task forces are now working on problems generated by the work of earlier Agency planning efforts. These task forces are working with such problems as a design for evaluating local school district Consolidated Applications for Federal Assistance, the design of an Education Management Information System, and development of criteria for approval of local school district consolidated applications.

OFFICE OF PLANNING SUBDIVISIONS

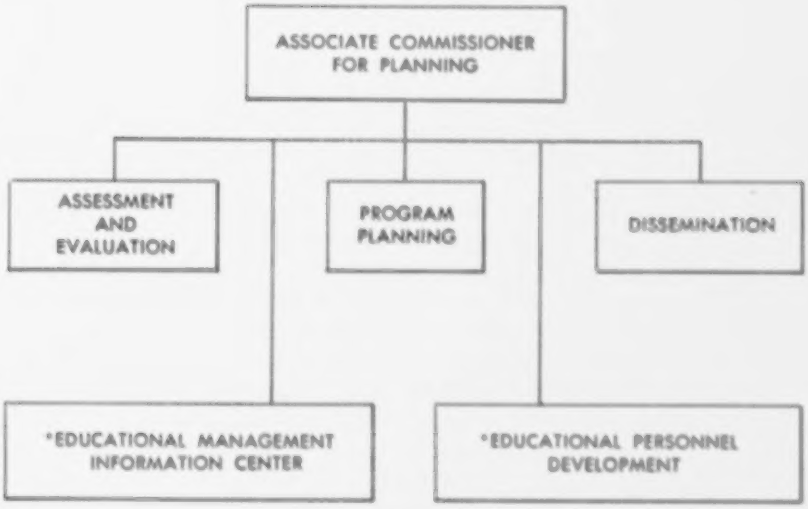
As a result of these and other planning activities, especially of efforts to identify the *major functions* to be performed and to align staff resources accordingly, the structure of the Office of Planning has undergone change. From the original two divisions, the Office has grown to five subdivisions, each charged with carrying out certain functions. (See Chart #4.)

The *Assessment and Evaluation group* will have responsibility for coordinating assessment of educational needs of the State, coordinating of evaluation of educational programs, and providing technical assistance service to Education Service Centers and local school districts in the areas of need assessment and program evaluation. To fulfill these responsibilities, the division will assemble available data on pupil and teacher populations, participate in the design of an educational management information system, manage study groups and planning committees, coordinate the design of Agency-wide evaluation, assist local school officials in building evaluation procedures, conduct evaluations of projects under Titles I and III of the Elementary and Secondary Education Act, and coordinate the development of needed measurement instruments and techniques.

The *Program Planning group* will be responsible for establishing and periodically re-appraising priority educational needs of the State, coordinating Agency staff planning for new programs

CHART No. 4

OFFICE OF PLANNING


ASSOCIATE COMMISSIONER FOR PLANNING
ASSESSMENT AND EVALUATION
PROGRAM PLANNING
DISSEMINATION
*EDUCATIONAL MANAGEMENT INFORMATION CENTER
*EDUCATIONAL PERSONNEL DEVELOPMENT

* The body of this report refers to the practice of the Office of Planning of relinquishing the operation of newly established programs to other Agency departments as these programs become operational. This practice has been followed with the Educational Management Information Center and Educational Personnel Development.

which arise from the interface between priority needs and available resources, coordinating and integrating pilot projects conducted by the Agency, assisting in the refinement of the Consolidated Application for local school district programs, establishing and refining criteria for approval of local district applications, and providing technical assistance to local school officials and Education Service Centers in setting objectives and planning effective programs.

The *Dissemination group* will have responsibility for coordinating Agency efforts to identify and disseminate innovative and exemplary practices, preparing news releases and radio-TV materials for public information, directing and refining Agency internal communications activities, handling information for recruiting educational personnel, and providing consultative services to Education Service Centers and local school districts regarding their dissemination activities.

The *Educational Personnel Development group* will coordinate Agency-wide activities in in-service education for local school district staffs, manage the Agency's responsibilities for the administration of funds under the Education Professions Development Act and other sources of support for staff development, encourage and assist local school districts, Education Service Centers, and institutions of higher learning in the cooperative development of educational personnel development projects, and coordinate a program to recruit and train persons with needed competencies who are not presently in the teaching profession.

The *Educational Management Information Center* will be charged with responsibility for the development, and subsequent operation, of a system that will provide and make easily accessible information needed for assessment of needs, evaluation of programs, control of fiscal procedures, and reporting to appropriate boards or agencies. A system will be designed to provide such information for planning and for fiscal accounting, and will be adapted to computer storage and retrieval. This information center will constitute a basic support service for all planning activities in the Agency.

CHAPTER 3

Regional Education Service Centers

DEVELOPMENT OF THE SERVICE CENTERS

The establishment and development of twenty regional Education Service Centers is an example both of a product of educational planning by the Texas Education Agency and of a key instrument for furthering comprehensive planning. Because the Centers represent a major planning effort of the Agency, because they are an integral part of the State educational planning machinery, and because development, and coodination of these Centers was Texas' specific project within the Seven-State Project for Comprehensive Planning, this chapter will describe how they were established and what they were assigned to do.

Texas' twenty Education Service Centers represent a culmination of the efforts of many Texans to improve educational opportunities for all of the State's elementary and secondary pupils.

The first step was taken when educational groups joined forces in urging that State funds be made available to match local funds for the purchase of instructional media. In 1965, the Fifty-ninth Texas Legislature enacted legislation authorizing the State Board of Education to establish state-supported Regional Media Centers by September 1967.

About the same time, Congress enacted the Elementary and Secondary Education Act, one part of which, Title III, provided for planning and developing supplementary educational centers and services. The Texas Education Agency decided early that coordination between these centers and services and the Regional Media Centers established by the Texas legislature would strengthen services and make them more available to all schools In addition, such coordination would provide the machinery – the Education Service Center – for involving all schools, regardless of size in educational planning for the State. The role of regional centers was subsequently expanded to provide media services and a broad range of other services needed by local school districts.

In the fall of 1965, as an initial step in developing a state plan for projects under Title III, ESEA, a panel on supplementary programs and services was called together by the Texas Commissioner of Education. The group, composed of representatives of schools, colleges, and universities throughout the State, identified the most pressing elementary and secondary education needs in Texas. During the first year of operation of the Title III projects, this statement of needs served as a guide to local school districts in planning projects. It also served as a guide to the Agency in reviewing and recommending projects for funding.

The Office of Planning was given the responsibility to conduct an in-depth study of the feasibility of providing educational services on a regional basis. An integral part of the study included the relationship of such services to the Title III program in Texas, the State Department of Education, institutions of higher learning, and the new regional laboratories and centers for educational research and development.

Following a careful study of the material on Education Service Centers prepared by the United States Office of Education, the Executive Planning Committee of the Agency developed a detailed description of twelve regional services particularly appropriate for Texas. These were summarized under the following four broad purposes to:

- provide locally-oriented base for planning
- operate regional media centers
- coordinate and encourage development of Title III
- provide additional regional services

The status of each service was determined, and the educational needs which were not being met at present by local schools were identified. Priority was given to the need for educational planning services. A study trip to regional centers in New York by the Associate Commissioner for Planning, conferences with officials from Pennsylvania where regional services were emerging, and consultation at the Agency with Dr. Cecil Hardesty, Superintendent of San Diego County Schools, California, and an authority on the operation of the intermediate unit, provided valuable information to the planners. The plan for regional services to be provided by Education Service Centers was refined by the Commissioners Coordinating Council of the Agency – composed at that time of the Commissioner of Education, the Deputy Commissioner, the Associate Commissioner, and four Assistant Commissioners. Simultaneously, personnel of the Texas Education Agency in cooperation with an Adviory Committee on Regional Education Media Centers (composed of educators from public schools, colleges and universities, and lay citizens), were planning for the development of the Regional Media Centers authorized by the Fifty-ninth Texas Legislature.

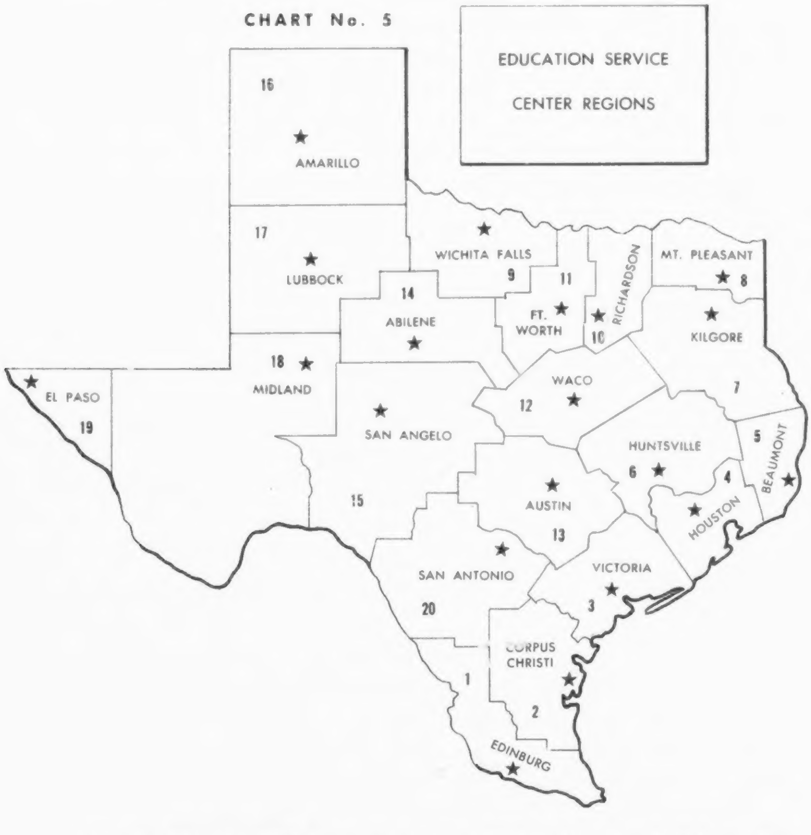
As a result of all this study, the concept of providing regional services was presented on November 13, 1966, to the State Board of Education for reaction. Further refinement of the concept followed.

Also in November 1966, the Commissioner of Education was authorized by the State Board of Education to appoint an Advisory Committee on Innovation and Assessment composed of educators (from public schools, colleges, and universities), and lay citizens. The Committee met in Austin in December 1966, and, in light of the study of regional services and of changing educational needs and goals, revised both the State guidelines and the State Plan for Administration of Elementary and Secondary Education Act, Title III. The Committee identified "Providing Educational Services within a Region" as the first educational need to be met through a Title III project. A Task Force of personnel representing a cross section of Agency functions and responsibilities was appointed to plan for the development of regional Education Service Centers. The work of this task force is described in detail in Chapter 2.

At its January 1967 meeting, the State Board of Education approved a tentative "State Plan for the Establishment of Education Service Centers" and designated twenty regions of the state to be served. In drawing up regional boundaries, the Board took into account such factors as pupil population, geographic area, educational and cultural resources, and regional designations formulated by other state agencies for purposes of planning. Chart 5 presents the regional areas established as an outgrowth of the study. Education Service Centers vary in size from Region XIX, the smallest region, to Region XVIII which covers an area equal to the state of Indiana. They vary in number of students served (Grades 1-12) from Region XV with approximately 40,000 to Region IV with over 415,000 in average daily attendance.

Initial Funding. Some of the resources available to Texas under Title III, ESEA, were to be utilized to establish a Center in each of the regions, and project proposals were submitted to the U.S. Office of Education in January 1967. Some of the Centers were established in conjunction with an already existing project; others were new projects. Each of the twenty regions received $67,000 for the period May 1, 1967, through April 30, 1968, for purposes of planning the Center and employing essential staff.

CHART No. 5



At its March 1967 meeting, the State Board of Education gave final approval to the State Plan for the establishment of the Centers. Consequently, organizational meetings for the Centers were begun throughout the State.

Board of Directors assures local control. Each local school district in Texas, through its Board of Trustees, was encouraged to select a representative to the Joint Committee for the region, the first planning group involved in the development of the Centers. Organizational meetings of these committees were held in each region in April 1967.

In keeping with educational tradition of long standing, members of the Service Center Board of Directors, elected by the Joint Committee, are lay citizens. Organized during May, each Board faced two important tasks during the early months of operation – appointing the executive director and selecting a site for the Center. In making the latter decision, each Board considered such factors as concentration of population, availability of facilities, and accessibility of the location to all parts of the region. The Sixtieth Legislature enacted legislation broadening the definition of Education Service Centers to include the provision of a broad range of supplementary services and making the Centers eligible to receive certain Federal funds directly.

As noted before, the State Board of Education, in May 1967, established within the State Department of Education an Office of Education Service Centers, under the direction of an Assistant Commissioner for Service Centers. Responsibility for administration of programs under Title III, ESEA, was transferred from the Office of Planning to this new office, along with the responsibilities for coordinating and planning activities for the establishment and operation of the various components of the regional Centers. In addition the office administers the State's responsibility under State legislation which provided funds to be matched by local school districts for the purchase of educational media distributed by the Centers.

SERVICE CENTER ORGANIZATION AND STAFFING

Generally, regional Education Service Centers have an organizational structure which is similar to that of a local school district. (See chart #6) However, since they developed in terms of local needs, there is also some variation among the Centers both in services and in organizational structure.

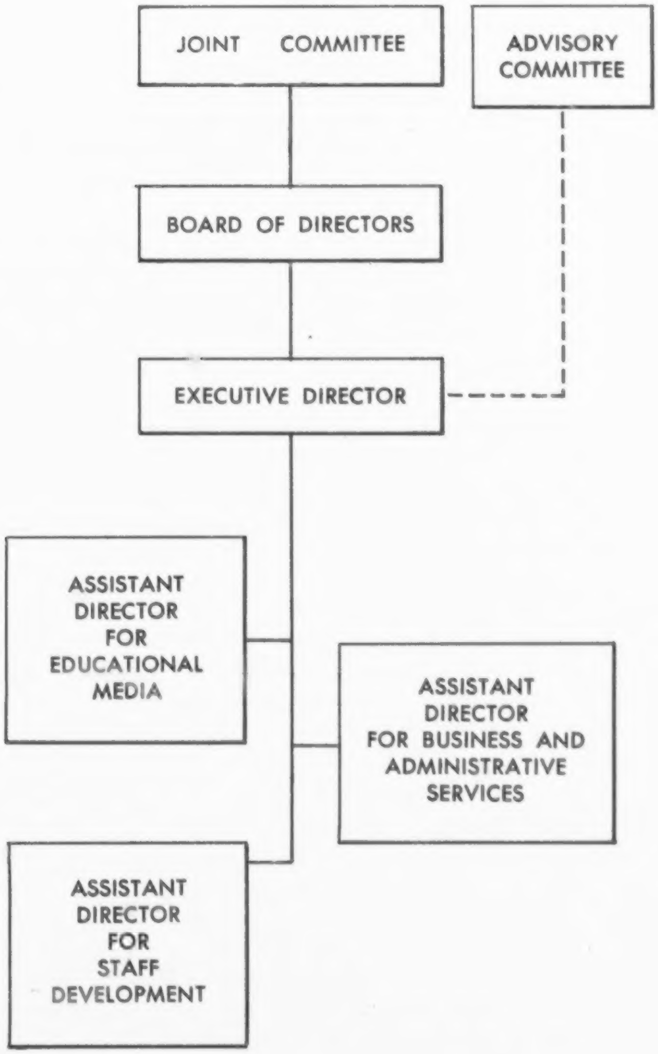
The Joint Committee is made up of representatives chosen by local school boards. Members of the Joint Committee are, almost without exception, local school superintendents. The Joint Committee elects the regional Board of Directors, and advises the Board of Directors about the operation of the Education Service Center. The existence and purpose of the Joint Committee is a major difference between Education Service Center organization and that of a typical local school district.

Board of Directors Functions. The regional Board of Directors is composed of five or seven members who are laymen residing in the region. Some of the functions performed by the Board of Directors are:

- Selection of an executive director for the Center
- Development and approval of an annual budget
- Approval of all fiscal arrangements, including determining the amount of money local school districts will be

CHART No. 6

ORGANIZATION FOR
REGIONAL EDUCATION SERVICES CENTER


JOINT COMMITTEE
ADVISORY COMMITTEE
BOARD OF DIRECTORS
EXECUTIVE DIRECTOR
ASSISTANT DIRECTOR FOR EDUCATIONAL MEDIA
ASSISTANT DIRECTOR FOR BUSINESS AND ADMINISTRATIVE SERVICES
ASSISTANT DIRECTOR FOR STAFF DEVELOPMENT

assessed for participation in regional educational media services

- Formulation of policies for operating the Center
- Coordination of an annual evaluation of Center services and activities
- Holding meetings with the Joint Committee as needed to utilize their advisory services

The executive director is chosen by the Board of Directors. His qualifications are described by the State Plan for Education Service Centers as follows: "The Executive Director of the Regional Education Service Center shall hold a graduate degree and be a person who has demonstrated, through experience in education, a high degree of ability in administration, program development, and experimental programs."

Not only do the twenty regions display a wide variety of pupil populations, but in some regions sizable Title III grants had been designed to develop a structure for providing supplementary services on a regional basis prior to the establishment of a statewide system of Educational Service Centers. Strong emphasis was placed upon planning the program of each Center in terms of the needs of local school districts within the region. These differences have resulted in a wide variety of staff size and staffing patterns.

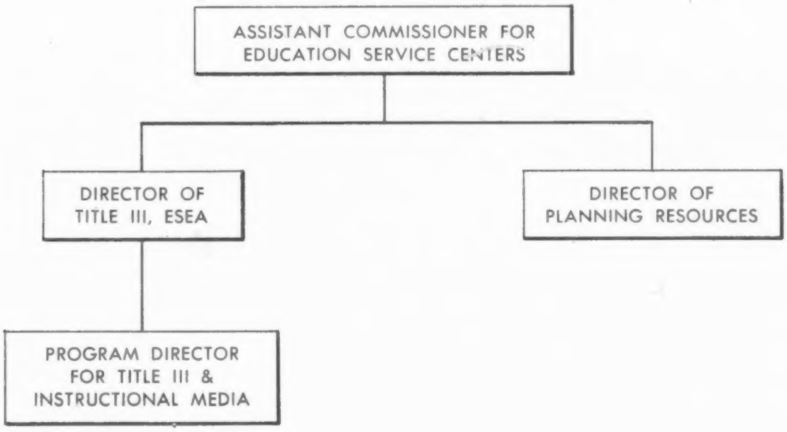
As noted before there is an Office of Education Service Center within the Texas Education Agency which coordinates the programs of the twenty Service Centers. The present staffing pattern in the Office of Education Service Centers provides for a Director of Planning Resources who is responsible for maintaining communication among the Education Service Centers and other State planning bodies. He is also responsible for identifying statewide educational needs which might be met through the Service Centers and for identifying resources for meeting these needs. This staffing plan is shown in chart #7.

PURPOSES FOR SERVICE CENTERS

The Education Service Centers were established to provide locally oriented bases for comprehensive educational planning, to provide regional media services, to coordinate and improve the quality of projects funded under Title III of the Elementary and Secondary Education Act, and to provide additional supplementary services which individual school districts might not otherwise be able to obtain in sufficient quantity or quality.

CHART No. 7

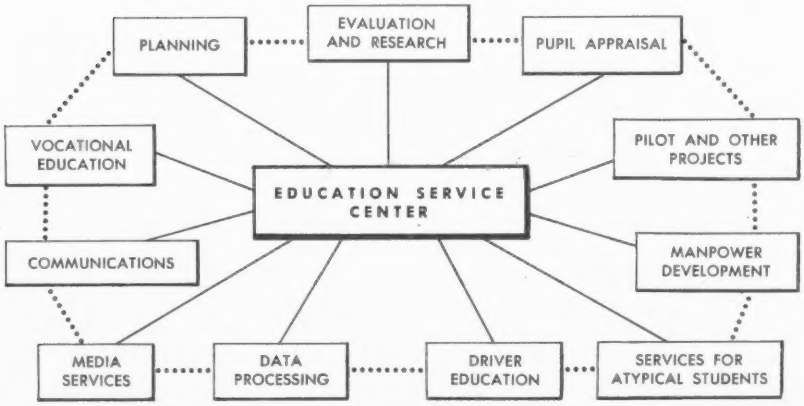
OFFICE OF EDUCATION SERVICE CENTERS


ASSISTANT COMMISSIONER FOR EDUCATION SERVICE CENTERS
DIRECTOR OF TITLE III, ESEA
DIRECTOR OF PLANNING RESOURCES
PROGRAM DIRECTOR FOR TITLE III & INSTRUCTIONAL MEDIA

Services which regional Education Service Centers might provide to local school districts include assistance in educational planning, evaluation, and research; education personnel development; educational media production, distribution, and training; pupil appraisal; curriculum development; services for the handicapped; management information systems; electronic data processing; communication and dissemination. (See chart #8)

CHART No. 8

FUNCTIONS AND SERVICE OF SERVICE CENTERS



LEADERSHIP AND SERVICE RESPONSIBILITY

It should be emphasized that the Education Service Centers are not intermediate administrative units; they were created as independent agencies to provide services in a more efficient and effective way than was previously possible. The Centers have been protected from regulatory functions, thus enhancing their position of leadership and service to local school districts. The Texas Attorney General has ruled that Education Service Centers are *local education agencies* and are eligible to receive various forms of State and Federal assistance. Participation in the Education Service Center by local school districts is voluntary. However the channeling of various funds through the Service Centers, along with the obvious advantages of cooperative efforts in many areas, has encouraged school districts to participate in Service Center activities. In short, Education Service Centers were established to do things *for* local educators without doing things *to* them.

The Education Service Centers are to provide the needed educational services which local school districts are not able to provide in sufficient quality or quantity. The populations which they seek to affect are children, youth, and adults, but their activities are directed primarily toward local district staff who work with these populations. Among the nine priority areas of concern discussed previously, the centers have focused upon educational personnel development. Priorities, in addition to manpower development, reflect regional needs. The Centers differ in selection of priorities programs providing an expected systematic variation. As the Centers work closely with the Agency in statewide planning, the results of these variations can be helpful to the Agency in assisting school districts to move toward more comprehensive planning, and consequently toward higher quality programs.

COMPREHENSIVE EDUCATIONAL PLANNING

The Education Service Centers have a vital role to play in moving the concept of comprehensive statewide educational planning into local school district practice. This key role in the central leadership strategy is being realized as the Education Service Centers:

- administer programs and provide services which are based on regional priorities,
- assist local school districts to develop the capability for priority and comprehensive planning,
- disseminate to the region information about promising new educational developments, and

- keep the Agency informed about the needs, resources, and progress being made in the local districts.

During the 1968-69 school year staff from the Texas Education Agency and the 20 regional Education Service Centers operating as a total leadership systems will provide intensive planning assistance to selected local education agencies – at least one in each of the regions. This pilot project in technical assistance will be coordinated by the Office of Planning. Members of the technical assistance teams will be familiar with the requirements of each of the Federal programs in the Consolidated Application for Federal Assistance. This application, representing a statewide design for packaging Federally assisted programs, is described in Chapter 4. Teams will assist the selected school districts in assessing needs, setting priorities, developing programs, and designing evaluation plans. Out of the pilot project and the experience which the entire Agency staff will gain in working with schools during FY 69 will come the refinement of the application and improvement in the ways the staff can use the instrument in assisting local education agencies with planning. The experience gained with the pilot districts in FY 69 will place the Agency in a position to work with all Texas school districts in ensuing years.

In order to implement its strategy of working with the Education Service Centers to achieve statewide comprehensive planning, and in order to provide supplementary services needed to meet the priority areas of concern, the Agency has moved to increase financial support for the Centers and to help them develop their staff capabilities. As Service Centers develop their capability in comprehensive planning, they will assist local districts develop this capability.

In this planning the Education Service Centers have responsibility to assist local districts improve the quality of their project applications for ESEA Title III funds and to help the Agency ensure that coordination and communication is achieved among Title III projects.

The Texas Education Agency benefits greatly from the ideas and reactions of local school leaders. These ideas which flow through the Education Service Centers and become inputs for statewide planning. The Education Service Center seems to be an ideal way to facilitate two-way communication between the Agency and the more than 1,200 school districts now operating in Texas.

An important contribution of the Education Service Center structure to statewide educational planning should be noted. The twenty executive directors meet with the Texas Commissioner of Education on a monthly basis and have broad responsibilities for statewide planning. This Texas Elementary and Secondary School Planning Council helps the Commissioner to keep well informed about regional needs and programs and to work with the directors in educational planning for the State as a whole.

DETERMINING NEEDS AND PRIORITIES

The consolidated application-report procedure (see Appendix A) has led each Center to make a survey of needs in its region. Like the school districts it serves, the Center establishes its priorities among the statewide priorities by identifying pupil populations needing services and by identifying the staff populations needing development. Close communication with schools of the region will result in wise decisions regarding desired outcomes and promising strategies to move toward these outcomes.

By using a system of descriptors similar to those used by the local school districts, the Center strengthens its information-gathering potential, and in subsequent years the flow of information among local districts, regional centers, and the State agency will have value in substantiating information and in re-constituting priorities.

EDUCATION PERSONNEL DEVELOPMENT

Service Centers have consistently listed education personnel development as being one of the local schools' greatest needs. This need has also been identified by the Texas Education Agency as its number one priority for the 1968-69 school year.

One of the most exciting and encouraging developments reported by Education Service Centers is the move toward the cooperative planning and operation of education personnel development programs by regional consortia of local schools, institutions of higher learning and Service Centers. The opportunity to bring together a number of educational leaders with varying viewpoints for the purpose of cooperative planning of staff development programs has stimulated the enthusiasm and imagination of planners at all levels.

OTHER AREAS OF EMPHASIS

Other areas which have been identified for major emphasis during the 1968-69 school year include the further development and extension of media services, provision of pupil appraisal services, special services for the handicapped, and the extension of Service Center capabilities to provide comprehensive planning assistance to local schools and to the Texas Education Agency.

EDUCATION SERVICE CENTER ACTIVITIES

Some typical activities conducted by Service Centers during the 1968 fiscal year include:

- Conducting briefings and workshops cooperatively with Texas Education Agency staff members to assist school districts with the new "packaged" application for Federal assistance (see Appendix A).
- Distribution of educational films and other media to participating schools
- Conducting awareness conferences and workshops for teachers dealing with new curriculum developments and teaching techniques
- Coordination and operation of computerized student scheduling and the development of other computerized administrative services to be put into operation during fiscal 1969.
- Participating in statewide planning projects organized by the Texas Education Agency
- Providing special programs for pupils with handicaps.
- Organizing a cooperative driver education program to serve a number of school districts too small to support an adequate program individually
- Planning of educational personnel development activities in cooperation with institutions of higher learning and local school districts

The preceding examples were selected at random from Service Center newsletters. They are far from being a complete list of services provided. As might be expected from the wide variations in needs and resources which are found in the regions, no two Service Centers offer exactly the same array of services. However, media services and educational planning assistance have been offered by each of the twenty Service Centers.

FINANCIAL SUPPORT FOR EDUCATION SERVICE CENTERS

During the first year of operation each Center received a basic allocation of $67,000 upon the submission and approval of a Title III, ESEA appplication. During fiscal year 1968, the twenty

Education Service Centers received a total of $4,000,000 under Title III, ESEA; $2,764,000 from State and local funds for media; $536,000 under Title VI, ESEA; and approximately $225,000 from other sources.

The Educational Media operations of the Centers are financed jointly by the State and local school districts. The state allots to each approved Center up to one dollar ($1) per scholastic in average daily attendance provided that each district pays to the center a sum at least equal to the State share.

The State Advisory Committee for Innvocation and Assessment stated that its highest priority in the use of Title III, ESEA, funds was the establishment of regional Education Service Centers to provide supplementary educational services. Other sources of funds used by Education Service Centers during fiscal 1968 include Title VI, ESEA, and other local funds. In a number of instances, school districts utilized a portion of their Title I, ESEA, funds to contract with the Education Service Center to provide cooperative staff development institutes and workshops.

THE FUTURE OF EDUCATION SERVICE CENTERS

It appears that the Education Service Centers face both a challenging and a promising future. In the years ahead, it is anticipated that financial support will be significantly increased. This will enable Service Centers to increase the number, quality, and extent of services to schools. However, undue dependence upon Federal funds for a large portion of the financial support might result in instability as a result of the uncertainty of funding. This observation is not meant to convey a lack of appreciation for Federal assistance. Far from it. Without Federal funds Education Service Centers would, in all likelihood, still be in the planning stages. But a dependable funding base drawing upon State, local, and Federal resources is essential to the realization of the full potential of the Service Centers.

The Governor's Committee on Public School Education, established by the Texas Legislature in 1966, has conducted a pervasive study of educational needs and resources in Texas and will soon make suggestions for improvement. The Committee's report is to be distributed in September of 1968. These recommendations of the Committee will deal in part with the Education Service Centers. At the time of the writing of this report, the substance and tenor of these recommendations were unknown. However, the Committee's recommendations were expected to lead to some important changes in Service Center support and in their purposes and structure.

CHAPTER 4

Packaging: A Strategy in Planning

PURPOSES OF PACKAGING FOR LOCAL EDUCATION AGENCIES

Packaging of Federal funds for school districts means planning for and using the funds in light of a total educational program rather than as isolated program units. It means identifying pupil needs as the beginning point of educational planning, ultimately leading to patterns of expenditure of funds — rather than using available funds as the point of departure or planning.

Previously funds have come to local districts from a number of Federal sources, but the fragmented pattern of Federal programs has made it difficult or the Texas Education Agency or local school districts to plan for a total educational program. It became obvious to the Texas State Board of Education, as it did to the United States Office of Education, that the present approach to having some twenty-seven different Federal educational programs — each with its own set of regulations for funding, operating, reporting, and evaluating — results in inflexibility, overlapping, and inefficiency.

Consequently, the State Board of Education authorized the Agency staff to proceed with the development of a single State design for several Federal programs administered by the Texas Education Agency.

The Office of Planning was given the responsibility to lead and coordinate the efforts to develop the design to "package" Federal funds. Staff members representing all major divisions of the Agency and the various Federal programs studied existing procedures and planned modifications. Advice of officials from local school districts and Education Service Centers was sought in every phase of the planning for packaging.

The various Federal funding sources included in this design are categorical in nature, having received Congressional approval for specific purposes. The intent of Congress will be fully honored in every case. However, these various Federal programs overlap and provide funds for similar expenditures in many instances. For example, funds are available for staff development activities under fourteen different Federal programs. The situation has been such that the superintendent has had to plan separately for each in-service program utilizing any of these Federal resources. Under a packaged design, he is able to plan a unified staff development program supported by funds from diverse sources.

ADVANTAGES OF PACKAGING FEDERAL ASSISTANCE PROGRAMS

Although packaging is an attempt to avoid duplication and to provide flexibility, it is not an attempt to move away from categorical aid to general aid. Quite the contrary, packaging is an attempt to integrate the various categorical programs into a single comprehensive design which better meets the needs that Congress sought to meet when it enacted the various programs. Packaging does not cause categorical programs to move away from their intent, but allows the various categorical programs to be coordinated and planned in terms of the entire Federal expenditure. Packaging allows the educational planner to break walls of isolated planning and allows him to plan in terms of the total educational program.

Packaging also reduces paperwork for the local school districts by simplifying application and reporting procedures. Advance funding to the local districts on a monthly basis is made possible.

PRIORITY PLANNING

A basic component of comprehensive planning is priority planning. Priority planning begins with the identification of priority groups of children, youth, and adults needing services and instruction. The educational institution relates its program and funding plan to the outcomes desired for these populations. Resources are focused upon educational needs of greatest concern (priorities).

CONSOLIDATED APPLICATION PROCEDURE ASSISTS LEA PLANNING

The Agency's efforts to develop a design for packaging Federal funds have resulted in the development of three consolidated applications for Federal assistance to be used by local educational agencies, Education Service Centers, and the Texas Education Agency.

Although the consolidated applications are different from each other, there is a common purpose which is found in each. That common purpose is the development of comprehensive educational planning in local school districts. The consolidated application for local districts has been designed so that if the district completes the application conscientiously and correctly, it will develop an information base and many of the skills necessary to comprehensive planning.

Recognizing that many local school districts will require assistance in developing planning skills, the Texas Education Agency proposes to form a partnership with the Education Service Centers to provide extensive planning assistance to the local districts. But the Agency and the Service Centers must first develop a degree of expertise if they are to be able to provide effctive assitance. In order to move toward the development of this expertise in planning during fiscal 1969, a number of teams composed of Agency and Service Center staff members will work with a limited sample of local districts throughout the year. The strategy will be to use the local district consolidated application as a training device to help Agency, Service Center, and local district staff to learn how to develop more comprehensive educational planning in the local districts.

CONSOLIDATED APPLICATIONS FOR SERVICE CENTERS

The consolidated application developed for the Education Service Centers is similar in many respects to the one used for local school districts, except that populations to be served, priorities, and programs are regional rather than local. This similarity with the local application helps Service Center staff to develop understandings and skills which will be useful in working with local school districts. Similarities in terminology and format also simplify the task of translating local data into information needed for regional and statewide planning. Finally, the Service Center's consolidated application for Federal assistance provides financial support for Center participation in the pilot project in educational planning assistance and for its other programs.

CONSOLIDATED APPLICATION FOR THE TEXAS EDUCATION AGENCY

The Texas Education Agency's consolidated application differs from the local and regional applications in a number of ways. However, one of the major activities to be supported by the Ageny's consolidated application is Agency participation in the division-by-division, program-by-program approaches.

Consolidation of administrative funds is a management tool which can enhance the Agency's utilization of resources available under Federal legislation. In June 1968, the Texas Education Agency filed an application with the United States Office of Education to consolidate State administrative funds. Consolidation of these funds allows management to organize and deploy manpower along functional lines. This regrouping of personnel, already underway and described in the section dealing with the "Management Plan," emphasizes leadership rather than regulatory activities. It focuses educational planning at the state level upon broad more comprehensive approaches, and away from narrower

The Agency's application to consolidate funds further describes the major program management purposes as follows to:

- provide a higher level of supervision in both the Agency and local education agencies
- focus on high priority educational problems
- strengthen major functions of the Agency such as:
  - assessing educational needs
  - setting priorities
  - developing strategies for new approaches to solving educational problems
  - applying resources under various Federal titles according to legislative intent
  - evaluating programs
  - disseminating results among local and regional education agencies, institutions of higher learning, the State education department, and other state departments of education.

BUDGET CATEGORIES BY MANAGEMENT FUNCTION

The application also describes the method by which the Agency proposes to distribute expenditures from the Consolidated Fund to Federal program sources.

The proposed budget form provides for the Consolidated Fund to be distributed by object of expenditure under the following six "Management Functions": General Administration; Program Planning, Development and Evaluation; Services for Improvement of Instruction; Services for Improvement of Administration; Accreditation, Licensing and Staff Development; and Services for Agency-Operated Institutions and Programs. Other budget information is included such as the amount of the consolidated fund distributed to local education agencies by program source and the source of the consolidated fund by program. The number of positions to be funded under the proposed budget are also distributed according to these six functions.

One problem encountered in preparing the application was in the interpretation of the descriptors developed by the U.S. Office of Education to identify the "Federal Program Management Activities" for distribution of percentage of effort by program. No definitions accompanied the twelve "activities": Need Identification, Priority Development, Project Proposal Planning, Project Proposal Development, Project Proposal Review, Project Monitoring, Project Evaluation, Dissemination, Accounting and Auditing, Reporting, Consultation Services, Improvement of Management and Planning. As a first step toward strengthening planning for the next application for September-June, management at the Agency appointed a task force to develop operational definitions of these "activities." Among early actions of the task force was defining the word "activity," as used in the application, as being synonymous with the word "function." Tentative definitions have been developed for each of the twelve functions. Further refinement and clarification will follow.

CHAPTER 5

Implementing the Planning Design

PLANNING STRATEGIES

In review, the Texas Education Agency has used the following strategies in its efforts to move toward comprehensive educational planning.

Establishing Regional Education Service-Centers. The Agency has provided the means whereby a state-wide system of Regional Education Service Centers have been established. One of the basic strategies of the Agency is the establishment of an institutional identity for the Centers and to strengthen their ability to provide planning assistance and other technical services to LEA's based upon regional needs. The Centers will play an increasing role in fostering local initiative in the development of innovative and high quality projects which may be funded under Title III, ESEA as well as to provide specific services for LEA's.

Strengthening the Functional Organization of the Agency and Centers. The organization of the SEA and the Service Center operations is progressing along functional lines. The functional approach will assist the central leadership system to exert real influence toward planning quality programs and developing renewal capabilities in local school districts. The functional approach permits greater flexibility in the use of personnel and other resources it holds promise for improving Agency-Service Center capabilities through consolidated efforts.

Developing a State-wide Mechanism for Planning. The Agency and the twenty Education Service Centers forms a central leadership system designed to assist local school districts in developing comprehensive educational planning. As an example of a cooperative coordinated effort this leadership system has initiated, developed, and implemented an integrated consolidated State plan for utilization of Federal funds.

Improving Technical Planning Assistance. Another strategy is the provision of improved technical planning assistance through the central leadership system to assist every local school district in furthering comprehensive planning. Emphasis is on leadership activities which will encourage and promote local efforts to develop and maintain quality in their own programs.

Packaging of Federal Funds. Packaging of Federal funds is one of the vehicles the Agency proposes to utilize to achieve comprehensive planning (see Appendix A for detailed consideration of packaging). Initial planning efforts are focused upon priority planning. In turn priority planning will lead to comprehensive educational planning. At the present time, packaging has been accomplished for three levels of educational agencies — State (Texas Education Agency), regional (Education Service Centers), and local school district. Presently ten federal assistance programs are included in the packaging effort.

PILOT PLANNING ASSISTANCE PROJECTS

In order to strengthen the broad-based technical assistance described above, the Agency-Service Center system will provide intensive planning assistance for a limited number of school districts during Fiscal 1969.

School districts are being helped to develop models of effective local management which can be replicated later in other local education agencies. At least 20 school districts (one in each service center region) have been selected to serve as pilot planning schools in Fiscal 1969.

With the growing awareness of the need for accurate information about the effects of educational programs on pupils, a State design for evaluation has been developed. Work has begun on the design of an Educational Management Information System that will provide information for needs identification, program control, evaluation, and dissemination at both state and local levels. The pilot schools will be assisted in strengthening their evaluation designs during Fiscal 1969 to assess all program activities and their effectiveness in meeting objectives.

A MANAGEMENT PLAN

In order to implement the planning strategies previously described, the Texas Education Agency has designed a management plan to strengthen and develop the following major functions:

- Diagnosis and Evaluation
- Strategy and Program Planning

- Dissemination and Replication
- Educational Personnel Development
- Program Funds Management
- Internal Program Planning and Evaluation

These functions call for responsibilities at both the State and Service Center levels. Some responsibilities will be jointly shared; some responsibilities are divided between the Agency and the Service Centers; and other responsibilities are performed by both, but with a difference in scope. Still other functions may be assigned to the appropriate institutional level as they emerge during the next five years. The following brief descriptions will illustrate the Agency functional approach:

DIAGNOSIS AND EVALUATION

At the Agency level, the diagnostic or intelligence function is concerned with the initiation of studies to validate, reformulate, and reconstitute priorities on a statewide basis, with the development of designs for data gathering and analyses of statewide data, with evaluation of operating programs, and with on-site visitation to schools to provide technical and planning assistance.

STRATEGY AND PROGRAM PLANNING

In the strategy and planning function, the Agency provides broad program criteria, guidelines for working with the selected pilot schools, and plans for field testing and refinement of a variety of programs. Based upon priority needs, imaginative educational techniques will be generated and developed.

DISSEMINATION AND REPLICATION

Some of the statewide responsibilities in the dissemination and replication function are the identification of promising programs and procedures, the development of statewide replication and renewal capabilities, the development of an effective communication and dissemination program, and the provision of technical assistance to local planners.

EDUCATIONAL PERSONNEL DEVELOPMENT

In its educational personnel development function the Agency is concerned with statewide personnel needs and development. Agency efforts center on broad studies to identify shortages in terms of numbers and competencies and on development of strategies for recruitment and staff development. A statewide design for recruitment and educational personnel development programs has been prepared to assist in moving from the present piecemeal approach to a systematic integration of resources to meet critical personnel needs.

PROGRAM FUNDS MANAGEMENT

Experience gained from program approval sections in various divisions of the Agency has been used in developing and operating the program funds management function. This function consolidates the following activities:

- Preliminary Processing of Consolidated Applications
- Reviewing and Approving Applications
- Monitoring Local School District Programs

INTERNAL PROGRAM PLANNING AND EVALUATION

The internal program planning and evaluation function at the State level involves responsibilities such as the internal management of the Agency, the development and retraining of Agency and Service Center staff, strengthening patterns of staff-utilization, and the evaluation, refinement, and renewal of Agency procedures. This function is focused upon the development and improvement of the activities of the Agency itself.

COMMITMENT

The Texas Education Agency is seriously committed to going beyond merely putting these ideas about functional reorganization on paper. Now in operation are a new Program Funds Management Division, other new functionally oriented divisions in the Office of Planning, and a task force charged with designing a Management Information System. Other functional changes are being designed for future implementation. These changes will be implemented in an orderly sequence over a five-year period so that disruption in other basic Agency operations will be minimized.

This functional reorganization brings about significant changes in the organizational structure of the Agency and in the work performed by many Agency employees. Nevertheless, the Commissioner of Education and the State Board of Education are convinced that the benefits which will accrue as a result of developing a structure for implementing comprehensive educational planning are well worth the costs and problems involved.

Comprehensive Planning in State Education Agencies

PART VI

A

CONNECTICUT

REPORT

Written by

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Hartford, Connecticut
1968

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FOREWORD

This report is final for Connecticut only in the sense that the funding period for the Multi-State Project expires on June 30, 1968, and a final report designation is required. The idea of Comprehensive Planning in State Educational Agencies, as it applies to Connecticut, might be described as initiated but not completed, as accepted in principle but not in detailed application, and as a promise but not yet a solution for the increasing problems facing top management. In truth, this is a progress report rather than a final report.

The following pages will give some background material and observations as to why the comprehensive planning function in the State Department of Education of Connecticut may be quite different from the other states and Puerto Rico in the Multi-State Project.

Included in the material on the following pages will be found some thoughts and recommendations for establishing a planning unit in a state educational agency, or a local educational agency.

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CHAPTER I

The Need for Planning

R. Douglas Dopp [*]

RATIONALE FOR COMPREHENSIVE EDUCATIONAL PLANNING

Comprehensive planning is a new emphasis given to state education agencies for the purpose of providing long-range planning capabilities. The Multi-State Project, *Comprehensive Planning in State Education Agencies,* has provided the opportunity to develop a series of models from which each state might select ideas for establishing its own planning unit. Each model reflects the peculiar circumstances of the state in which it was developed, such as the circumstances related to the legal, social, political, and economic environment of that state.

State education agencies have long needed to strengthen their positions of leadership and service to local school districts. With a planning capability, it is possible for an agency to go beyond the efforts of gathering statistics or doing sporadic research. In addition, a planning capability, centered around a planning unit within the SEA allows for some concentration of effort to be placed upon the broad issues and problems of education for which no other single operating unit within the agency is totally responsible. A planning unit with the responsibility for providing leadership and technical planning assistance is in a unique position to bring together many resources to bear upon a plan which is under development. In Connecticut, basic resource data for planning will come from professional and lay groups throughout the state, from school districts and from state agencies, from regional and national groups, as well as from bureaus within the education agency.

The planning capability of the State Education Agency can be further strengthened by the provision of in-service training programs in planning techniques, through leadership by the planning unit to the agency staff as a whole, and to individual staff members. This leadership should take the form of technical help and encouragement to do a better job in planning agency programs and activities.

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There are many new development taking place in the scientific management techniques of large organizations. Private business and industry have been taking advantage of these techniques for several decades. There is much that can be useful to educators at the state and local level. A planning unit within the agency is in a position to be in the vanguard of the adaptation and the application, where appropriate, of these new technologies to educational issues and problems.

PROBLEMS CONTRIBUTING TO THE NEED FOR PLANNING

Local vs. State/Federal Control

Anyone considering the problem of comprehensive planning for Connecticut, especially in the field of public school education, must have some awareness of the traditional historic emphasis upon local control. The unit of government that has been the key to power since the colonial period has been the township. Power in the State General Assembly of Connecticut was based in the town representation system in the lower house. Within the past year, and during the last General Assembly, Connecticut citizens have seen the end of this period in the Assembly as the philosophy of "one man, one vote" changed the Assembly membership. Even though the complexion of the Assembly has changed, this does not necessarily mean that the citizenry in the towns throughout the state has changed in attitude towards education or other state-wide problems.

The prevailing philosophy of local control does two things. First, it enables a school system in the state to forge ahead on its own initiative and try as hard as it can to become a lighthouse school system. It is as if the state had said to the town: "You can have as good a school system as *you* want to have without interference from the state." Second, while such a philosophy can be permissive enough for the state department to be the place where districts get service, obtain state funds, and even receive technical assistance if they wish to, it does not allow the SDE a role of positive leadership or a role to influence significantly local planning or priority programs to meet apparent educational needs.

It is hard to say that the philosophy of "local leadership — local control" is necessarily good or bad. Many fine developments have occurred in New England since the colonial times that may owe their success to the encouragement of local initiative and local innovation. On the other hand, as one superintendent of schools with experience in three states in New England has observed: "It also gives the local school district the right to have as *bad* a school system as they want, too! If the local unit of government wants a low tax rate at the expense of the school system, frowns on new or innovative ideas because they might raise taxes or curtail local control, or wants to offer a lop-sided program to the kids, they can do that too." There is no strong direction possible to correct such abuses unless you can turn to the state or federal people who control the funds that the local unit wants.

This historic approach to the problems of education is in all probability due for some change in New England generally, and in Connecticut specifically. There are many pressures at work. The problems that have arisen, or that loom on the horizon, are of such magnitude that the smaller educational unit in the state will be hard pressed to solve them. In some cases it may be that the very argument which has been used to good effect by the advocates of local control: *It is more economical if we run it locally*, may become a two-edged sword changing to: *It will be more expensive if we run it by ourselves or try to solve the problem for our town alone.*

URBANIZATION PROBLEMS

One of the growing pressures is that of urbanization. Connecticut is considered an urban state and has all the problems attendant to urban areas throughout the country, problems in which the state government has to be ever more interested and involved.

The problems include those of the inner city schools. The National Advisory Commission on Civil Disorders (The Kerner Report) raises concerns about conditions which exist in Connecticut cities. There are special educational needs in the cities that have to be met, and met soon. If the cities do not or cannot solve their problems alone, then the question must be raised: What is the role of the greater community and the state?

The impact of new legislative requirements in Connecticut has contributed to the need for comprehensive planning on the part of both local and state educational agencies.

SCHOOL TRANSPORATION AND AREA CENTERS

Still another force that exerts a pressure is the school transportation system. School districts are operating complex transportation systems throughout the state and need help in planning for the future. Superintendents are also considering area centers for special education to be utilized by several towns. Once again, the State Department of Education is involved in long-range planning for the development of such centers.

STATE AND FEDERAL FINANCIAL AID

The ever increasing demand for more state aid and more federal aid of various types for education creates a unique need for planning. In recent years there has been an ever increasing number of separate types of aid, with separate regulations and objectives. It may be that there must be more attention given to the concept of packaging types of aid, the development of clear statements of priorities and goals, and the exercise of the responsibilities of leadership if we are to avoid a financial dead sea of regulations and accountability structures. The State Department of Education may find itself in the position of having to say to the towns and cities: "There just isn't enough money for everything, and there isn't going to be. Let's recognize the fact and realize this means that there *are* state priorities in education and these have to be considered when you think of local needs."

Mention has been made earlier of the increasing role of the federal government in financial affairs of the local and state educational agencies. To this should be added the increasing role of the federal government in such areas as programs for the disadvantaged, regional centers, and more recently the Education Professions Development Act. Special mention is made of the Education Professions Development Act because of the stress it places upon the need for the state to establish priorities and objectives. The day has arrived when the State Department of Education must more clearly define priorities, goals, and objectives in planning for the future. The concept of packaging federal funds has been referred to earlier; at this point the observation might be made that this federal concept seems to have the strong backing of the U.S. Office of Education. The State Department of Education which decides not to study packaging now may be doing itself a disservice for the 1970's. If a federal decision has been made to go to packaging, then the more time available for planning before packaging becomes mandatory the better. When we talk of comprehensive planning for education, we must talk of including the "possible" and the "probable" in our planning, as well as the facts of life as we know them today.

REGIONAL TITLE III CENTERS

Regional Title III Centers in Connecticut, established under the Elementary and Secondary Education Act of 1965, present a challenge to the state and local education agencies planning for the years ahead. These regional service centers operate federal fund-wise on a three-year phase-out basis. At the end of that period the federal support stops and local funding is supposed to take over to continue the new and innovative programs. It is probable that only limited planning at the local level was undertaken initially to determine the long-term future of these centers. The lack of administrative and planning funds for Title III at the state level made state help in long-range planning a limited possibility up to this year. With the advent of administrative funds for Title III at the state level effective July 1, 1968, it is hoped that this aspect of planning for the long-term future can become more realistic.

CONCLUSION

The preceding paragraphs point out some of the forces now at work in Connecticut. These forces will require many hours of serious planning at state and local levels. Within the State Department of Education there is an ever-increasing awareness that the 1970's will present some of the most serious problems for solution that the state has ever faced. There is an equal awareness that the state will be looked to for comprehensive educational planning assistance and advice. The planning department has the opportunity to become a far more influential partner in the educational enterprise. This project for comprehensive planning in SEA's is not terminal for Connecticut. Rather, it is the extension of an ongoing effort within the State Department of Education to look at the needs and goals of the department and to formulate comprehensive plans for meeting those needs.

CHAPTER 2

Evolution of Connecticut's Planning Capability

THE OFFICE OF DEPARTMENTAL PLANNING

The Office of Departmental Planning was placed in operation during February, 1965 after the program had been approved under Title V, Section 503, of the Elementary and Secondary Education Act (Chart #1 illustrates the position of the planning office in the structure of the SDE). The first year and a half was spent in getting the unit organized, preparing for reviews by the USOE, and working upon selected planning activities.

In the spring of 1966 the first Annual Planning Conference was conceived and conducted with the administrators of the Department in attendance. At this conference, major problems facing education in the state – elementary, secondary, and post-high school technical colleges – were identified.

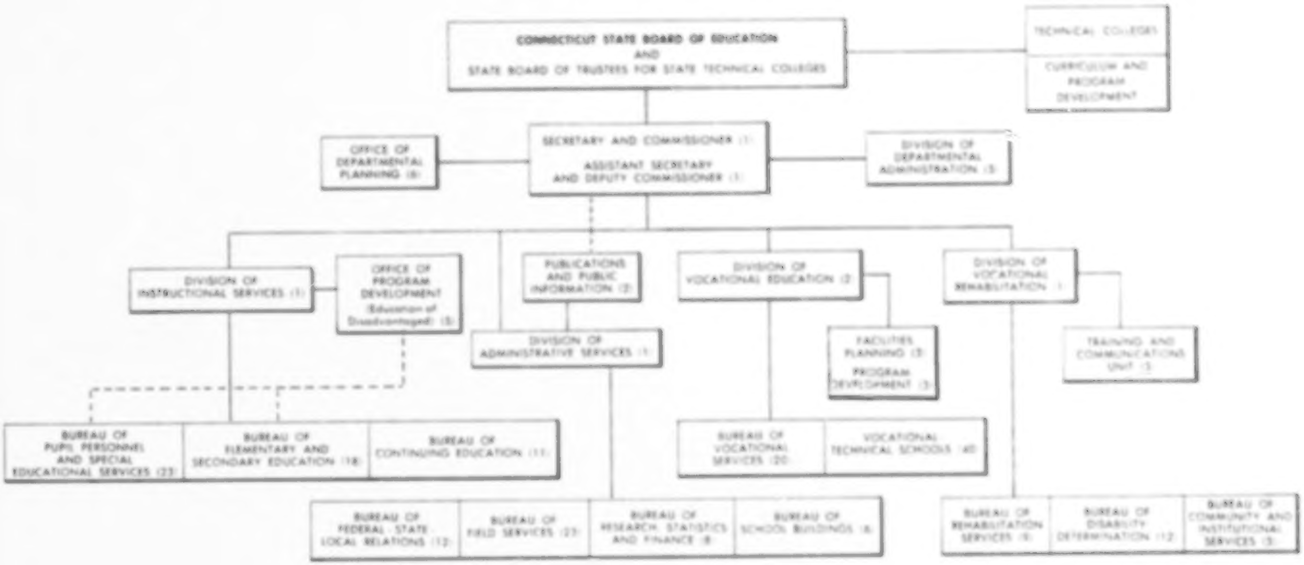
The role that the planning office would play in overall planning for the Department was discussed and general guidelines established. In brief, it was agreed that this office would concern itself with planning activities which generally met the following critera:

1. Planning of a long-range nature.
2. Planning that would involve two or more divisions.
3. Planning identified as needed, but requiring time the operational units could not spend.
4. Planning that would point to ways in which the Department could be strengthened.
5. Planning which would serve to enhance and supplement the many short-range types of planning activities already underway by other units.

The participants in this early conference concurred that the planning conference was productive. It afforded an opportunity at that time to identify problems which required both short and long-term planning. These problems were of such a nature that a solution involved several divisions. Program planning, already underway in the several divisions of the Department, was not

CHART No. 1

ORGANIZATION OF THE CONNECTICUT
STATE DEPARTMENT OF EDUCATION


CONNECTICUT STATE BOARD OF EDUCATION
AND
STATE BOARD OF TRUSTEES FOR STATE TECHNICAL COLLEGES
TECHNICAL COLLEGES
CURRICULUM AND PROGRAM DEVELOPMENT
OFFICE OF DEPARTMENTAL PLANNING (6)
SECRETARY AND COMMISSIONER (1)
ASSISTANT SECRETARY AND DEPUTY COMMISSIONER (1)
DIVISION OF DEPARTMENTAL ADMINISTRATION (5)
DIVISION OF INSTRUCTIONAL SERVICES (1)
OFFICE OF PROGRAM DEVELOPMENT (Education of Disadvantaged) (5)
PUBLICATIONS AND PUBLIC INFORMATION (2)
DIVISION OF ADMINISTRATIVE SERVICES (1)
DIVISION OF VOCATIONAL EDUCATION (2)
FACILITIES PLANNING (3)
PROGRAM DEVELOPMENT (3)
DIVISION OF VOCATIONAL REHABILITATION (1)
TRAINING AND COMMUNICATIONS UNIT (5)
BUREAU OF PUPIL PERSONNEL AND SPECIAL EDUCATIONAL SERVICES (23)
BUREAU OF ELEMENTARY AND SECONDARY EDUCATION (18)
BUREAU OF CONTINUING EDUCATION (11)
BUREAU OF VOCATIONAL SERVICES (20)
VOCATIONAL TECHNICAL SCHOOLS (40)
BUREAU OF FEDERAL-STATE-LOCAL RELATIONS (12)
BUREAU OF FIELD SERVICES (23)
BUREAU OF RESEARCH, STATISTICS AND FINANCE (8)
BUREAU OF SCHOOL BUILDINGS (6)
BUREAU OF REHABILITATION SERVICES (6)
BUREAU OF DISABILITY DETERMINATION (12)
BUREAU OF COMMUNITY AND INSTITUTIONAL SERVICES (5)

considered within the scope of responsibility for the new Office of Departmental Planning.

During the second full year (1966-67) of operation, selected planning activities were continued or initiated as a result of the challenges posed by the first Annual Planning Conference.

PLANNING STRUCTURE

As the months passed, it became apparent that the agency had to develop some formal structure whereby the administrators and other professional staff members could have an opportunity to review the progress of all major planning activities as well as being presented with a final report. Such a structure was devised and proposed at the second Annual Planning Conference. As noted on the chart, this structure included: (1) a Departmental Planning Council, (2) the Office of Departmental Planning with a Planning Advisory Committee, (3) the State Board of Education and the Commissioner – the decision makers, and (4) the entire professional staff of the agency.

The proposal submitted to the administrators for consideration was called the "Planning Cycle." (A diagram of this Planning Cycle is presented in Chart #2.) This cycle was approved and put into operation the following year.

The solid lines connect the major elements of the cycle. Ideas for major planning activities may originate from any source. The arrows simply indicate the necessity for two-way communication and the flow of ideas so vital to any planning activity.

The *Departmental Planning Council* is composed of the Commissioner, Deputy Commissioner, Division Directors, and Bureau Chiefs. These people are considered the administrators of the Department. Meetings of this Council have been held generally on a monthly basis.

The *S.D.E. Staff* has direct contact with the Departmental Planning Council in two ways. First, as members of a division or bureau (administrators represent staff personnel in their sections on that council); and second, staff members will be directly involved in each planning activity with specific participants selected appropriate to the activity.

The *Planning Advisory Committee* has not been fully agreed upon at the time of this writing. The main purpose for such a committee would be to provide other sources of ideas and information to the planning staff. However, in practice, the planning staff has been able to utilize the resources available to it through many

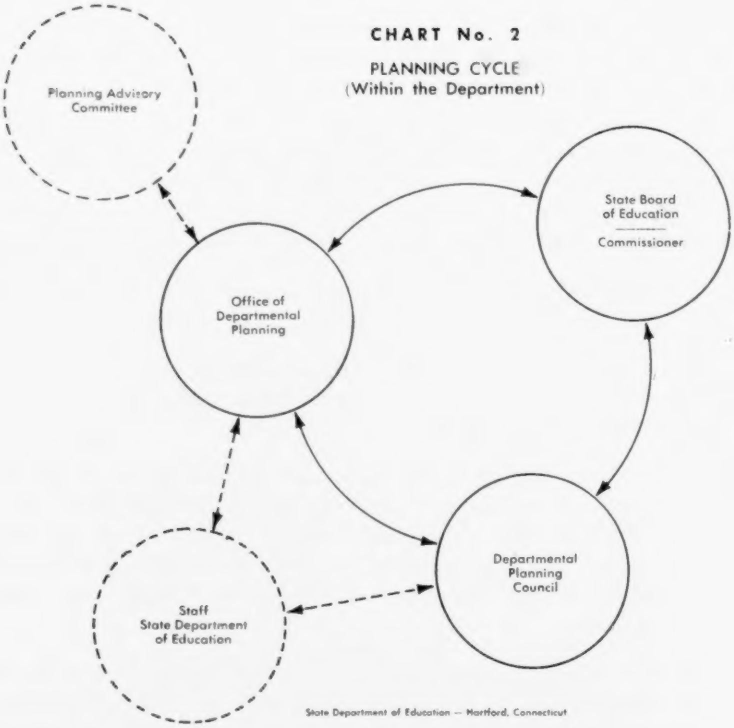


CHART No. 2

PLANNING CYCLE
(Within the Department)

Planning Advisory Committee
State Board of Education
Commissioner
Office of Departmental Planning
Departmental Planning Council
Staff State Department of Education

State Department of Education — Hartford, Connecticut

other advisory committees already serving many elements of the agency. Further consideration is to be given to this idea, however, and with additional experience, it is expected that such a committee could be quite helpful. Should such a committee be formed, it will be necessary to formulate very clear guidelines carefully outlining the expected work and responsibilities assigned.

The *S.B.E. Commissioner* element of the planning process shown in the cycle includes the members of the State Board of Education, the Commissioner (Secretary to the S.B.E.), and the Deputy Commissioner (Assistant Secretary to the S.B.E.). Planning activities of a short- and long-range nature have been originated here as well as through the other elements of the planning mechanism.

THE MULTI-STATE PROJECT

As the spring of 1967 progressed, a decision was made to participate in the Multi-State Project entitled "Comprehensive Planning in State Education Agencies," the secretary to the Connecticut State Board of Education became a member of the Policy Board of this Multi-State Project and the chief of the Office of Departmental Planning served as the state coordinator.

A document was prepared, dated June 26, 1967, in which the Connecticut ideas for the proposal were outlined under the title: "Design of the Comprehensive Planning Function in the Connecticut State Department of Education." Five tentative components of the state design were outlined, briefly these were as follows:

1. The State Board of Education is responsible for formulating the basic goals of the educational process for the state.
2. The Chief State School Officer is responsible for making the decisions which will lead to the attainment of the state educational goals.
3. The Educational Planning Staff serves primarily as an agent to carry out cooperative planning activities. The planning staff may utilize several resources in carrying out its planning functions. These may include technical expertise, the State Planning Council, and advisory committees.
4. The Departmental Planning Council translates the broad State Board of Education goals into more specific, interrelated and clearly defined objectives. The Departmental Planning Council is composed of the administrative heads of each division and bureau.
5. The operational units within the State Department of Education may use a problem-solving approach, with units of the department overlapping.

The organizational chart for the S.D.E., (chart #1) suggests the manpower available at the professional level in each bureau. Most of these professional personnel are assigned to sections, activity, or service areas of the bureau. Comprehensive Educational Planning has been considered an integral part of the Office of Departmental Planning. This is mentioned because there proved to be no special line of demarcation between the activities within the Office of Departmental Planning.

In summary, at this point the Connecticut State Department of Education entered the Multi-State Project with an already existing staff of planners, five components of a state design identified, and the Comprehensive Planning Project assigned to the Office of Departmental Planning. Provisions were made for a small support staff in addition to the professional staff.

Since the initiation of the Comprehensive Planning Project, the personnel in the Office of Departmental Planning have had many occasions to refer to the results of the annual Departmental Planning Conferences. For example, the 1966 Conference indicated the need for clear statements of the goals and priorities for the Department in this state. There are references to the need for more coordinated efforts of planning in the Department. The problem of communication within the Department itself, and between other state agencies is mentioned. There are references to the need for new approaches to the increasingly complex problems that are emerging for the state in elementary and secondary education.

Therefore, even though the annual Planning Conferences preceded the actual initiation of the Multi-State Project, the records of these conferences have been considered in the work of the project in Connecticut. By the same token, planning activities that have been assigned to individuals within the Office of Departmental Planning grew out of these Annual Planning Conferences and were important to the Multi-State Project. Some of these planning activities, identified in 1966-67, are noted below:

1. A study of the structure of the State Department of Education with special reference to the role of the Consultants.
2. A design for the study of inter-school district cooperation in education in Connecticut.
3. A plan to assist the city of Hartford in efforts to start the then National Teacher Corps in the city.
4. A plan to provide for internships in the department.

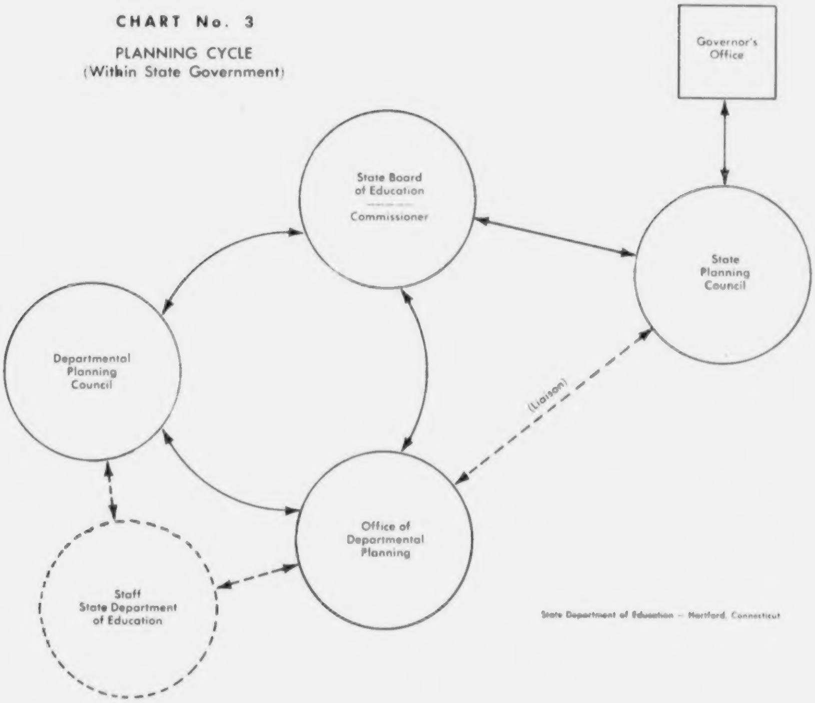
OTHER DEVELOPMENTS

During the fiscal year 1967-68, several major planning activities were undertaken as noted in other sections of this report. The "Planning Cycle" proved to be a valuable structure for keeping the entire staff involved and informed.

The 1967 General Assembly passed legislation creating a State Planning Council. This council is still in its early formative stages. The Commissioner of Education is one of the members of this council and the Office of Departmental Planning has a liaison relationship to it (Chart #3). This office works directly with

CHART No. 3

PLANNING CYCLE
(Within State Government)


Governor's Office
State Board of Education
Commissioner
State Planning Council
Departmental Planning Council
(Liaison)
Office of Departmental Planning
Staff State Department of Education

State Department of Education — Hartford, Connecticut

the Commissioner on activities related to the council's planning programs. Since this report has to do with the need for comprehensive planning in education at the state and local levels, it should be pointed out that the formation of this State Planning Council at the highest level is another indication of the recognition for comprehensive planning at top management level. Comprehensive planning at the State Department of Education level will have a direct benefit to the work of the State Planning Council.

This past year the planning unit was able to take advantage of a training session sponsored through the Comprehensive Educational Planning for State Education Agencies Project. This experience proved to be valuable to members of the staff. More of this kind of activity is necessary.

Special consulting services were obtained from the Graduate Center of Rensselaer Polytechnic Institute of Connecticut, Inc. The planning staff has been able to gain further training in some of the scientific planning techniques so readily accepted and used in big business and industry. The application of these techniques is new to the field of education, but from our experiences, hold great promise. These techniques give planners the tools by which they can do a better job. This in turn will give administrators and other professional staff an opportunity to make better decisions. The tools or techniques, per se, do not make the decisions, as some erroneously think, nor do they negate the need for using good judgment or other professional skills. They are, as described, tools to be used by the technician to process data from which decisions can be made.

OPERATIONAL EXPERIENCE OF THE OFFICE OF DEPARTMENTAL PLANNING

Much can be learned through the experience of others. In this spirit, brief comments will be made about several projects carried on during 1966-67 and 1967-68 which have implications for comprehensive planning.

A Study of the State Department of Education

One of the more important projects was presented to the Planning Council of the State Department of Education in June of 1968. It was the initial phase of a study of the role and function of the department. Special emphasis has been given to the role of the professional consultant within the State Department of Education. This study has been a major undertaking and has been a year or more in development. Since this is the initial phase of a long-range plan, the department has much left to complete.

This study provided the agency with some interesting and helpful insights. What has been learned from the process to date? The comments noted below provide clues:

1. A major planning study needs to have a commitment of time on the part of executives within the department to assist in moving the project along. If a survey is made for a specific purpose, then the management level must set the example for subordinates demonstrating that the results deserved and received special attention.

2. Adequate time needs to be made available for the presentation and discussion of major planning studies.

3. Clerical and auxiliary support services are essential. Logistical support should be under immediate control if it is to be most helpful.

4. As many people as possible should be involved in any planning activity. Personnel understanding through communication of the nature of the activity is essential.

INTER-DISTRICT COOPERATION

Another planning activity has to do with inter-school district cooperation in Connecticut. A new technique which was used in this planning activity involved the use of a computer to analyze intensity of one kind of cooperation between districts in the state. This planning activity has special relevance to Title III, ESEA, Regional Service Centers since these centers have a limited funding period and yet are performing an important function through the use of cooperative educational services to school districts. Comprehensive planning at the State Department of Education level is essential to the future of these programs.

MINI-PROJECTS

During the 1967-68 school year, the Office of Departmental Planning was instrumental in planning for and administering several Mini-Projects. These were a series of innovative ideas initiated by teachers in public schools throughout the state and submitted to the agency as a project proposal. The maximum grant for Mini-Projects was one thousand dollars per individual project. The Mini-Projects have been very successful and have been in a new dimension – the State Department working directly with the classroom teacher on innovative ideas. Success of the program led to a decision that the Office of Departmental Planning ought to transfer what is now basically an operational function to some operational unit of the Department. If the Office of Departmental Planning is to maintain its main focus on planning rather than actual operation of programs, this had to be done. In making the transfer, the planning staff gained experience with the problems of making a "program transfer" to an existing unit. The *planning function* must be the main purpose of the planning unit.

TASK FORCE MODEL (See Appendix A)

Another planning activity involved plans for using a Task Force model for the State Department of Education to use when needed to assist local school districts. This study has been accepted and is on a ready status in the Department. This document, first requires the school districts to analyze their own problems so that they know specifically what it is they want; second, by requiring planning assistance at the local level, the districts which ask for assistance by a Task Force is forced to start the planning for solutions of their own.

INTERNSHIP STUDY

Another planning activity which seems to have much importance for the State Department is the Internship Study. There have been problems about funding such a plan even though the idea has been endorsed by the staff. This situation does raise the question as to whether or not a planning staff should spend time on certain problems if there is the strong possibility that funds are not going to be available for the project.

STATE PLAN FOR EPDA (P.L. 90-35)

A state plan required by new legislation in the field of teacher education led to expenditure of much time in the Office of Departmental Planning. The new legislation is the Education Professions Development Act (P.L. 90-35). In order to plan to meet the requirements contained in this legislation, the state has to be thinking in terms of comprehensive planning, state priorities, state goals and objectives, and the best use of funds for the needs of the state. The planners learned while working with this new legislation: First, the idea of comprehensive planning is an integral part of new federal legislation in the field of education; it has to be done if we are to work harmoniously with the federal agencies for improved education in the 1970's. Second, the State Department of Education is going to be required to think more clearly about its own goals and priorities, and these must be stated in terms that are quantifiable. Third, there are new forces at work which will require cooperative, long-range planning between the state agency and local school districts.

The projects cited above are examples of a number of other studies or projects under consideration by the staff of the Office of Departmental Planning which have implications for comprehensive planning.

In all of these projects, one common factor stands out. Each activity contributes directly or indirectly to each other activity and there is a commonality which enlarges the concept of the scope of comprehensive planning.

CHAPTER 3

Recommendations

WHERE DO WE GO FROM HERE IN CONNECTICUT COMPREHENSIVE PLANNING?

As of June 30, 1968, the Connecticut project developed the following tentative operational definition of comprehensive educational planning. Comprehensive educational planning endeavors to:

1. Identify the long-range goals of education in the state of Connecticut for the generation passing through the schools in the 1970's.
2. Develop the priorities for the State Department of Education to direct the agency's efforts towards the goals of the 1970's.
3. Develop means of reaching these goals for the 1970's as quickly as possible.
4. Evaluate continuously the goals, priorities, and means of reaching established goals, all in terms of the changing needs of the state.

Besides the operational definition, there are three tentative factors which have been identified without which comprehensive educational planning cannot succeed. They are:

1. The development of an effective comprehensive educational planning capability within a state department of education requires top management support.
2. Comprehensive educational planning in a state department of education has to be concerned with the full scope of state department and local educational agency activities. Cooperation and communication within the department are essential to the concerns of planning.
3. Planning cannot be effectively carried on without funds to provide expert consultative services and to meet spe-

cial needs of the planning unit. The funds need not be great but they must be available for use without interference. The planning unit should control its own funds.

As noted before, comprehensive educational planning for Connecticut is in the preliminary stages of development. The concepts of comprehensive planning will be developed further, even though it may be under another name. Otherwise, the challenge of the 70's may be met with half measures, by reaction instead of action, and by mediocrity in achievement. If the agency is unable to develop its own estimate of priorities and then concentrate resources to meet these priorities, it would be questionable as to whether or not it would be able to retain other than purely service-type functions in the future. With this in mind, the question should be asked: What can the Office of Departmental Planning do after this Comprehensive Planning Project ends?

Several things are planned as a continuation of the work initiated during the past year. Some of the proposed activities are:

1. Annual Planning Conferences will be continued on a regular basis.
2. Priorities will be established for planning activities in 1968-69.
3. The Kerner Report, or Riot Commission Report, will be considered by the professional leaders of education in the state. Some work has already been done regarding this.
4. The concept of packaging federal funds is in the exploratory stage in New England. Since this involves other state agencies, it will in all probability be a complex and slow-moving development. The concept of packaging has been encouraged in principle by the U.S. Office of Education. At present, Congress may not permit it to be adopted, but within a year to two the demand of educators at the state and local level will be heard by Congress. At that time it may not be a question of whether or not the State will package, but only a question of when they will be required to package if they wish to receive federal funds during the 1970's.
5. The Office of Departmental Planning must assist in the development of priority identification of goals and objectives. The implementation of state plans for Title III of the Elementary and Secondary Education Act, and the

Education Professions Development Act, Part B 2, will further pressure the State to develop a scale of priorities.

6. As new programs, both state and federal, increase in number and complexity, it may require new organization within the Department for the 1970's. As one federal official states it: "It has been customary for most states to add another person and another office for each new program as each new law is passed. It is as if we built a new set of railroad tracks for each train we added to the line. Shouldn't we be studying a better way to run a railroad than this?" This involves the study of the Department, packaging, and much more.
7. The State Planning Council has been formed this year. The idea of comprehensive planning in education is necessarily closely related to the idea of comprehensive planning at higher levels in the state government and cannot exist separately from it.
8. The Office of Departmental Planning might make a special project study in the area of communications. This study would consider the communication problems both within the Department and the problems of adequate communication between the State Department of Education and the local school systems. Whatever can be done to facilitate communication at all levels will help comprehensive educational planning to progress at all levels.
9. The Office of Departmental Planning has an opportunity to be of service and assistance to all branches of the State Department by acting as a transmission center for new ideas, developments, or information gathered from a variety of sources and contacts. The broad problems of the state involve not only the State Department of Education, Department of Community Affairs and programs in education outside the department, fair employment practices, and others. If comprehensive planning is to benefit the State Department of Education in the 1970's, then the Office of Departmental Planning might be studying ways in which it might assist inter-departmental cooperation. Top management approval and active support would be necessary if the Office of Departmental Planning is to be effective in this type of activity.
10. The adoption of Planning-Programming-Budgeting System (PPBS) by Connecticut for use by all agencies will

involve a major planning effort on the part of the Office of Departmental Planning. This planning effort has begun.

New ideas for improving the planning posture for the Department will continue to evolve as the office gains more experience.

In the near future it is expected that the Office will initiate more planning activities involving other state agencies, local school districts, professional organizations, and concerned laymen. The Office has been developing a good working relationship with these groups since the inception of the Planning Office.

GUIDELINES FOR DEVELOPING A PLANNING UNIT

As a result of the experiences of the Office of Departmental Planning since February, 1965, some general observations regarding the development and implementation of a planning unit might be helpful. Those observations, or guidelines for action, might be equally helpful at the local level as well as the state level.

1. Consider that the activities of a planning unit will generally be comprehensive in scope. This applies especially to major problems where a long-range plan must be evolved.
2. Early and continuous attention must be given to the problems of communication within the organization, as well as the organization's contacts with outside resources.
3. Interpersonal or human relations must be considered carefully since a breakdown at this level can negate the best of plans.
4. Careful thought must be given to the matter of evaluation of planning projects.
5. The establishment of goals and objectives for the SEA is of primary importance. These must then be related to *priorities* of activities designed to meet the goals and objectives.
6. Members of the planning staff should have both individual and group responsibilities. That is, not only do they work on individual assignments but quite often it is necessary for two or more of the staff to share the planning responsibilities for a given project.

7. Planning generally takes a great deal of time and effort. To do the job facing SEA's, adequate numbers of professional and support staff must be provided.
8. A general inventory of available resources should be developed for use by the planning staff.
9. Continual up-grading of skills in the modern scientific techniques or tools of planning is essential.
10. Continued cooperative efforts, as they may be appropriate, with other kinds of planners are essential. This will include such professionals as city planners, educational consultants, and land use planners.
11. Comprehensive educational planning needs adequate financial support. This will include funds for travel, consultative services, training, computer time, and essential planning tools.
12. Self- evaluation in the planning process should be a conscious and continuous part of the operation. In the Office of Departmental Planning it has been found that weekly staff meetings are essential and sometimes there are more meetings than one per week.
13. The initiation of comprehensive educational planning within a state department of education requires policy decisions and administrative support of initial developments. Among these consider the following:
    a. The planning unit should be established as an autonomous unit reporting directly to top management in the State Department of Education.
    b. The planning unit should be established and supported whenever possible as a non-operational unit for ongoing programs of the department. It may well be that the planning unit will have to carry on some experimental projects for short periods — perhaps up to a year of operation. However, when a project or idea has been tested and evaluated, the expansion into broad state operation should be transferred out of the planning unit. A cut-off date and the plans for transfer of the program should be a part of planning.
    c. The staff to be assembled in a planning unit should represent a variety of skills, competencies, and experiences. A team approach within the planning unit

will bring all these various skills, competencies, and experiences into focus on any proposal or plan.

d. The staff of the planning unit will be expected to deal with many internal and external units having an interest in education, both governmental and non-governmental. Cooperation between operational units and a planning unit will be expected and supported at all levels.

e. It is to be anticipated that a planning unit will use funds for consultative or contractual services in unfamiliar areas of concern.

f. The total planning effort of a unit within the Department organized under a departmental office of planning is a comprehensive educational planning effort of the Department, regardless of administration or funding procedures.

g. A new planning unit is not suddenly superimposed on the State Department of Education. It is established as an aid to facilitate long-range planning. In practice, the unit has to earn the respect and cooperation of other units of the Department through day to day cooperation. The progressive steps to acceptance do not fall in orderly, regular sequence. A favorable climate has to be created and the threat of a new super agency removed as the new unit works on problems within the established department.

h. The planning office deals with many interrelated units in several state agencies. These units are staffed with people of normal desires, apprehensions and aspirations. The rate of progress (we call it rate of acceptance) depends upon *human relations* and demonstrated successes.

i. For the Connecticut scene, there is no easy alternate way to start an initial planning unit other than in an office which grows with professional acceptance *through good human relations*. If the planning office is to serve as a planning rather than an operational unit at top management level, it should be a staff function at top management level. The members of the *staff* develop personal intra-agency relationships with those at primary and secondary levels in each unit of the department, on each project touching that unit. A person-to-person relationship must develop through individual conferences, ad hoc committees, Bureau and Division Chiefs meetings, and progress conferences at the Commissioner level. *Involvement* outside the planning office is essential. Planning is done with others, not by a planning unit alone.

14. The concept of comprehensive planning at the SDE level ought to be extended to local school districts. Thus, the local planning units and the state planning unit could work cooperatively for the mutual educational advantage of all. The superintendents of schools are too often placed in the position of having to react rather than act. It can be hoped that the logical extension of planning to the local Superintendents of Schools will eventually give them something they, as local top management, can use; namely a planning capability in their own districts which can work for them on comprehensive long-range problems.

15. As local planning units are developed, information-exchange procedures must be worked out with them. Inservice training opportunities of mutual benefit should be encouraged. Consultants may be shared in some situations. Joint meetings would be helpful.

16. The planning unit in the SDE must remain aware of legislative trends and changes, both state and national. As new socio-economic, or political units appear that affect education, they must be considered. Liaison must be maintained and cooperation encouraged at all levels.

CHAPTER 4

Summary

This is a final report only in the sense that the federal funding for the Multi-State Project entitled "Comprehensive Planning in State Education Agencies" terminated for the participating states, June 30, 1968. This report would be better classified as a progress report on developments in Connecticut to date, but by no means a final report. It is expected that the work to date will provide the foundation for further work in educational planning in the state for the needs of the 1970's.

The Comprehensive Planning Project in Connecticut has been in existence for a little over one year. During this period the problems of staffing, securing office space, providing appropriate equipment, and budget revisions have been encountered. In spite of the delays and uncertainties, it is felt that significant progress has been made. Four generalizations can be made at this time as follows:

1. The orientation of American education towards the future in today's changing culture now places added demands upon state departments of education. Reaching defined goals for state planning in new dimensions, and a long-range decision-making process at state department levels are imperative. A comprehensive planning unit is of material assistance in this process.
2. The top levels of administration within a state department are already overburdened with operational and legislative demands. The added assistance available to them through a planning unit means strengthening their leadership role and broadening their influence. In our experience, comprehensive educational planning and a departmental planning office have become a composite endeavor under the concept of a planning unit.
3. The creation of a comprehensive educational planning unit within a state Office of Departmental Planning makes possible a fresh approach to problems within the Department. The planning unit makes it possible to work across

unit boundaries, and to develop more cooperation within the Department on broad problems facing management.

4. The cutback in federal funding for Title V, section 505 programs meant the termination of the multi-state project in 1968. This could have meant the total loss of the lessons learned through the project, however, by the creation of the Office of Departmental Planning and the use of Title V funds within the State Department of Education, it is possible for Connecticut to continue its planning effort and build upon the foundation laid to date.

An effort to encourage planning units in all State Departments of Education should be continued. A procedure could be established for sharing information between all state planning units on a regular basis. Human relations skills must be emphasized if comprehensive educational planning is to be more than an academic exercise. Planning activities are dealing basically with the forces of change and most people are uncomfortable with change. Feelings and emotions are critical determiners of action.

Appendix A

A Task Force Model

OFFICE OF DEPARTMENT PLANNING GUIDELINES FOR TASK FORCE OPERATIONS

DR. HARRIET L. GESLER [*]

INTRODUCTION

Today, educators are faced with decision-making on problems which are extremely complex in nature. Tenable decisions require vast amounts of information. In this respect, educational systems resemble business and industrial systems and organizations. It has become increasingly difficult for a group of people, chosen from within the structure of an organization, to obtain and evaluate appropriate information enabling them to propose tenable problem-solutions. In the past, reliance has been placed on the judgment of individuals or the recommendations of committees. The task force approach is frequently better suited to today's problems.

Judicious selection of the membership of the group is a characteristic of task force operations. The group in this case is made up of specialists. Each specialist understands the objective, his own role in meeting the objective, and the conditions which prescribe the role of the task force. The special skill of the individual is used to explore fully, relevant parts of the problem. The group synthesizes the judgments of its members, and proposes solutions. This technique, widely used within other systems as a phase of Operations Research, holds the promise of being useful to the Department in proposing solutions to problems not only within the Department, but also to those within local school systems.

The structure of a task force differs from that of the familiar committee. The methods of establishing objectives and the procedures also differ. Because of these differences, it is necessary to establish some guidelines if the Department is to use the task force approach effectively. These guidelines will give direction to the participants and suggest criteria and techniques for using this procedure for problem-solutions.

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[*] Dr. Harriet L. Gesler is an Education Consultant in the Office of Departmental Planning, Connecticut State Department of Education.

DEFINITIONS

a.) The task force may be defined as a group of people with the responsibility for meeting a specific objective.

b.) The task force may be defined as a group of people, each of whom has specialized knowledge, that has responsibility for examining a problem and formulating solutions.

c.) The task force may be defined as a group of people, who are part of a larger group dealing with a complex problem. The task force investigates and proposes solutions for an element of the inter-related problems.

CRITERIA

The *Criteria* are stated as questions. The answer yes or no, determines whether or not the problem is appropriate for a task force operation. This judgment will be made on the basis of the information provided in the description of the problem. The judgment will be made by the Commissioner or someone designated by him.

The *Application* and *Procedure* sections give guidance to the person seeking task force help. These data supply the evidence that the criteria are met. In those cases where the resources to supply this information are not available to the applicant, the Department may offer assistance.

Some of the criteria may not apply to task force operations within the Department of Education. There may also be times when all of the elements described in the sections on procedure may not carry equal weight. Generally, the information that is requested, will assist staff members to perform efficiently by furnishing the background to the problem.

Criterion 1: Can the problem be specifically identified and described in quantitative and/or qualitative terms?

Application: Responsibility for describing the problem lies with the one seeking task force assistance.

Procedure: The description should:
a.) include relevant background information
b.) include previous steps taken to solve the problem
c.) state financial considerations

d.) indicate constraints on the problem

e.) propose solution target date

Criterion 2: Is the problem complex with several variables?

Application: Traditionally, the significant variables in education have been identified quantitatively in numbers of pupils, staff, dollars and space. A task force operation suggests broadening the base. Some of the additional variables forming this base might reflect combinations of the following: technology, learning theory, community planning, human resources, environmental constraints, federal grants, behavioral science, or human development.

Procedure: The description should:

a.) identify the relevant elements of the problem

b.) estimate the critical quality of each element

c.) establish priorities for considering the elements

d.) list the elements that have been studied

Criterion 3: Can solutions be found most efficiently by employing several specialists?

Application: Involving two or more people with a task force operation can be an efficient or an expensive way to solve a problem. The purpose of this criterion is to establish a cost/estimate. From cost/estimate data, rational decisions on use of departmental personnel can be made. The question is not, can four specialists resolve this problem four times faster than one person. Rather, the question may become, can four specialists resolve the problem with greater validity than one person who may seek the counsel of specialists as the situation requires it.

Procedure: The problem description should:

a.) indicate what specialized knowledge is needed

b.) state the specialist's responsibility

c.) estimate the man/hours for each task force member

d.) estimate the expenses of the task force

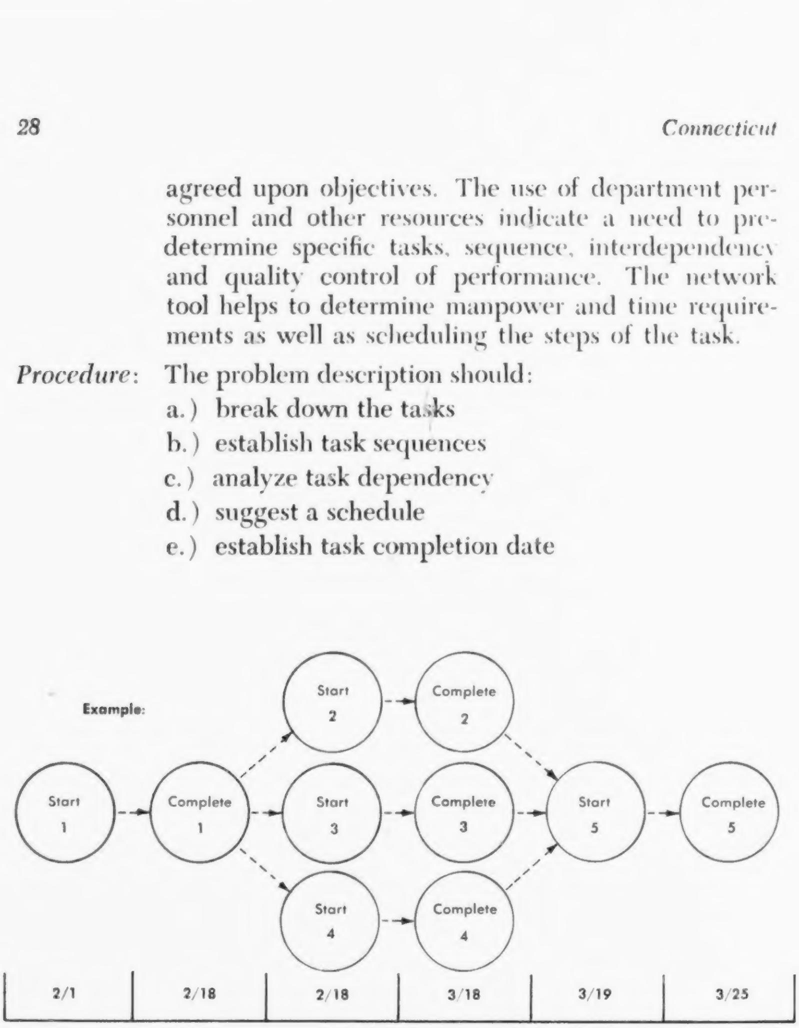
Criterion 4: Can the solution time be plotted in a management network pattern?

Application: Management efforts have been directed toward developing a science of planning in order to achieve agreed upon objectives. The use of department personnel and other resources indicate a need to predetermine specific tasks, sequence, interdependency and quality control of performance. The network tool helps to determine manpower and time requirements as well as scheduling the steps of the task.

Procedure: The problem description should:

a.) break down the tasks
b.) establish task sequences
c.) analyze task dependency
d.) suggest a schedule
e.) establish task completion date

Example:



Criterion 5: When the task force reaches a decision on problem-solutions, will the recommendations be accepted and acted upon within a reasonable time?

Application: It is reasonable to anticipate a rare condition when the time and efforts of the task force may be wasted, because the problem-solutions have low probability of success. Theoretically, the operation should be aborted as soon as conditions indicate this possibility. These conditions may grow out of such things as: a change in school administration, a change in Board composition, persistent financial blocking or failure to acquire the needed cooperation within the solution-seeking organization. In all other operations, however, group integrity should be preserved. "Specifically, the group reaches a decision by receiving and evaluating the specialized information of its members. If it is to act responsibly, it must be accorded responsibility. It cannot be arbitrarily or capriciously overruled. If it is, it will develop the same tendencies to irresponsibility as an individual similarly treated." (*The New Industrial State* by J. Kenneth Galbraith, Page 69).

Procedure: The problem description should:

a.) indicate plans for communication within system
b.) state procedures for policy-making within system
c.) assess the receptivity of the policy makers
d.) analyze the constraints inhibiting the policy-makers

GOALS

Once the judgment has been made that the problem is an appropriate one for a task force, the next step is to determine what the task force operation should be An important departmental consideration, which led to exploring the task force approach to problem-solutions, was the search for ways to multiply the department's effectiveness. The task force is useful only as it contributes to overall departmental goals which may be stated as follows:

> Cooperatively developing strategies to improve education in Connecticut;
>
> Contributing to the strengthening of local leadership;
>
> Promoting departmental staff growth through exposure to multi-dimensional educational problems.

By definition, then, the task force must state its objective or mission in terms that are consonant with the above goals.

TASK ANALYSIS

1.0 Select task force leader
    1.1 Design task force operation
    1.2 Determine personnel requirements
    1.3 Select task force personnel

2.0 Study problem description
    2.1 State task objective
    2.2 Define component tasks
    2.3 Plan component activities
    2.4 Set component completion dates

3.0 Establish operating principles
    3.1 Assign record-keeping responsibilities
    3.2 Schedule events
    3.3 Develop communication flow

4.0 Establish task completion date
    4.1 Prepare tentative report
    4.2 Test solutions with department administrative committee
    4.3 Prepare final report

5.0 Submit problem solutions
    5.1 Identify steps for implementation
    5.2 Design follow-up procedure

6.0 Report assignment completed

Comprehensive Planning in State Education Agencies

PART VII

INITIATION OF PLANNING IN THE UTAH STATE EDUCATION AGENCY

Written by

DON K. RICHARDS
Project Director

Utah State Board of Education
Salt Lake City, Utah
1968

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CHAPTER 1

Introduction and Orientation

BACKGROUND DATA REGARDING UTAH

Don K. Richards[*]

As Utah was settled, it was characterized by many small school districts which multiplied with little regard for the number of pupils or the financial resources available. It was, however, recognized very early that such small school districts should be consolidated and this was accomplished in 1915, well ahead of the national movement. Utah's public school education has benefited greatly by having only forty school districts. For example, consolidation (1) has facilitated cooperative curriculum improvement programs, (2) has made possible closer working relationships among the Office of the State Superintendent, the teacher training institutions, and the local district administration in the continuous upgrading of teacher education and certification programs, and (3) has had a profound influence in effecting substantial savings as a result of greater efficiency in administration. Consolidation, by creating larger districts for taxing purposes, has also made possible greatly improved school financing programs.

Despite this earlier effort, additional consolidation should be effected in Utah as a means of alleviating some of the difficulties arising from the wide diversity of district types. Notable differences exist in such factors as geographical size, population size and density, rural and urban settings, and available economic resources. Continued consolidation is expected to occur as the limitations of such situations are fully realized.

Because of a rather limited assessed valuation and a per capita income which even in 1968 is lower than that of either the national or Rocky Mountain state's average, financing education

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has always been a problem in Utah. The problem has been compounded by the fact that Utah has a high birth rate, a relatively low infant mortality rate, together with a strong commiment to the importance of education which has resulted in a citizenry that has achieved an average educational level of a little over twelfth grade.

For many years local districts assumed major responsibility for school finances; however, a major step forward was taken when in 1946 the State established the "Minimum School Program" as the basic method of financing public education in Utah. This method guarantees a minimum level of financial support for each child regardless of the wealth of the district in which he lives.

This equalization program has permitted the improvement of education throughout the State, particularly in those districts with limited assessed valuation per child. However, because the legislature has imposed some limitations on district taxing power, this same equalization program has, to some extent, limited the ability of wealthier districts to invest in high quality programs. As a result, there has been a tendency toward uniformity in the amount of money available and in the type of school program provided in the various districts of the State. While generally lauding equalization efforts, some Utah educators suggest that this trend, if practiced to the extreme, may tend to discourage local leadership, responsibility, and interest.

Almost from the time of settlement, Utah has had a state superintendent of schools. Various procedures have been used for the selection of candidates for this post; however, in 1951 the present practice occured as a result of a constitutional amendment. The State Board of Education now appoints the state superintendent to serve at its pleasure. This procedure has resulted in greater professionalization of the position.

The role of the state superintendent and his staff has, over the last 15 years, gradually changed from that of regulatory and record-keeping to one of educational leadership. This improvement has been brought about by a number of factors: (1) recent federal legislation has resulted in a dramatic change in the number, the makeup, and the capabilities of staff; (2) innovation and experimentation have been encouraged and cooperatively developed; (3) not only has the amount of information increased but the information has been made more readily available through the use of improved retrieval systems; (4) improved internal organizational patterns, and developmental activities are providing the strengths necessary for the improvement of services.

Utah's educational leaders have sensed an increasing need for the improvement of long-range planning. Systematic development of staff capability in planning and related areas such as research, information, and data management has begun. The project, "Comprehensive Planning for State Education Agencies" has been a dynamic force in helping Utah to recognize the importance of comprehensive educational planning. The project has helped the State develop a planning model and recommend procedures for making an operational Planning Unit.

DEFINITION OF COMPREHENSIVE EDUCATIONAL PLANNING

Long-range planning is frequently thought of as planning, which is projected over a period of years; and *comprehensive planning*, as planning which combines numerous factors into a unified whole.

Planning is a continuous and dynamic process which facilitates educational problem- solving and administrative decision-making. Planning (1) defines objectives, (2) identifies major problems, (3) examines principal means for solving these problems, and (4) specifies objective bases for evaluation of performance and outcomes. Plans which are produced by this technical process are not seen as final designs but as steps leading toward a solution to a problem. A written plan serves as an instrument of communication which helps to direct action and coordinate programs. Care must be taken that plans do not become permanent or outdated rather that they remain dynamic guides to present and future activities.

Planning must be selective, adaptable, simple, and flexible. It is a process of gathering, processing, and distributing data in a way that renders the data available at the time and place of decision-making. The method of planning must provide essential guidelines so that each educational leader can do his own individual planning within the context of a larger frame of reference.

NEED FOR PLANNING

In recent years Utah educators have come to recognize that the tools, skills, and methodologies possessed by individuals capable of doing long-range planning can help in the solution of such important problems as (1) adapting to the rapid changes occurring in our society, (2) the necessity for modifying educational programs to meet the individual needs of society, and (3) the importance of making more effective use of limited funds.

RATE OF CHANGE

The history of civilization is a story of continuous change. Those that successfully adapted to their changing environment continued to grow and prosper; those that failed did not survive.

But what is drastically and explosively different today is the *rate* of change. Significant changes that once required generations or centuries are now happening virtually overnight. Edward J. Green[1] claims that as a result of this fact there are only three things known for sure about the future: "(1) it will not be like the past; (2) it will not be like one thinks it is going to be; and (3) the rate of change will be faster tomorrow than it was today or yesterday." Under these circumstances planning which may be used as a device for producing desired change, preventing undesired change, and for meeting or anticipating change is vitally needed by education in this period.

MODIFICATION OF EDUCATIONAL PROGRAM

Elementary and secondary education today is one of the largest enterprises in society. Every year greater responsibility is placed upon educators to plan and carry out broad educational programs, to evaluate the scope and quality of those programs, and to produce significant results. This increased responsibility and the accelerated rate of change combine to make long-range, comprehensive planning more crucial and more difficult. Such planning will help educational leaders to know what their objectives are, which objectives are the most important, and what kind of resources are required in what quantity and quality and at what time and place. These elements are basic to good decision-making and essential in an era of continuous change.

EFFECTIVE USE OF EDUCATIONAL FUNDS

Educational planning is needed in Utah to help insure the most efficient use of limited funds for education. By most of the accepted standards of comparison, Utah has one of the heaviest public school commitments in the United States. Although the ability of the State to finance the public schools is low, the effort made is at or near the top in the entire nation. Although Utah ranks very high among the fifty states in effort, it is somewhat below regional and national averages in the amount expended per pupil. This is due to such things as the large number of children in the State to be educated, the relatively low economic base, and the fact that less than two percent of Utah children attend private schools.

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[1] Edward J. Green, **The Management of Change,** Edward J. Green Associates Management Consulting Firm Paper (Pittsburgh: By the author, 1967), p. 6.

Over the years, Utah has enjoyed a comparative advantage over other states in the efficiency of its school system. During recent years, however, this advantage has decreased as other states have made rapid strides in the consolidation of school districts and the elimination of small, inefficient schools.

The use of such planning techniques as systems analysis, PERT, planning-programming-budgeting, cost-benefit analysis, enrollment forecasting, and projecting revenue estimates can all contribute to wise management of educational financing.

THE STATE BOARD OF EDUCATION INITIATES THE DEVELOPMENT OF PLANNING CAPABILITY

Commitment to educational planning must begin with the State Board of Education, which commitment is best demonstrated by the adoption of policies that will permit and encourage such planning.

The Utah State Board of Education has placed high priority on the need for planning and has developed some planning capabilities among its staff as a result of several individual planning projects assigned to the agency. The Board, in 1965, adopted policies to encourage specific planning endeavors by committing the State to participation in a multi-state project funded under Section 505, Title V of ESEA, the eight-state project, "Designing Education for the Future" and later, the seven-state project, "Comprehensive Planning in State Education Agencies. The Board has also provided State resources to finance planning endeavors and has indicated its intention to continue support.

PLANNING REQUIREMENTS

If educational planning is to fulfill its great potential for assistance in state education agencies and is to have the thrust essential to this fulfillment, it will require: (1) a recognition of the importance of educational planning and a commitment to its basic purposes; (2) a highly competent planning staff unencumbered with the demands of other administrative and supervisory responsibilities; and (3) sufficient time and resources to accomplish the task.

Planning techniques are becoming sophisticated to the point that individuals assigned to do educational planning need to develop new skills through inservice activities. No longer can educational leaders be both generalists and part-time planners relying upon their intutition or past practices for decision-making. Instead, full-time educational planners should be identified and resources provided for their training and improvement. They must be freed from operational tasks so that they can devote their attention to providing the decision-makers with adequate alternatives from which to select together with relevant information requisite to such selection.

CHAPTER 2

Development of Utah's Planning Capability

This section of the Utah report treats chronologically the three phase development of Utah's Planning Unit, including the source of financial support and its placement in the organizational structure of the Office of the State Superintendent of Public Instruction. Specific planning structures or organizational elements such as the Planning Unit, the Planning Council, the Program Review Committee, and the Executive Committee will be introduced.

It will be noted from the Time-Frame below that Phase I, the Planning Phase, was begun July 1, 1967 and has been completed. Phase II, the Transitory-Operational Phase, was accepted and initiated on July 1, 1968 by the State Board of Education and its executive officers. Phase III, the Theoretical Planning Model Phase, may be operative by July 1, 1969 but will likely be modified to some extent according to the adequacies or inadequacies which may develop as Phase II is implemented.

A TIME-FRAME ILLUSTRATING PHASES IN THE DEVELOPMENT OF UTAH'S PLANNING CAPABILITIES

Phase I – The Plan for Planning Phase	Phase II – The Transitory-Operational Phase	Phase III – The Theoretical Planning Model Phase
1 July 1967	1 July 1968	1 July 1969?

PHASE I – THE PLAN FOR PLANNING PHASE

During the first year that a Planning Unit existed in the State Education Agency, the staff was charged with the responsibility of developing a "plan for planning" – a procedural model for employing educational planning within the agency. This report is one result of these efforts and does recommend specific procedures for a comprehensive planning program in Utah.

As the staff of the State Board of Education moved to fulfill its responsibility for advancing educational improvement, it placed increasing emphasis on leadership. Each division in the agency has begun, by necessity, to devote a greater portion of its time and resources to planning. Each division has improved its capability to develop carefully prepared plans in order to better perform its role.

In the movement toward better leadership through planning, the staff recognized that some group was needed to provide technical assistance to the several divisions in their planning endeavors and to undertake certain planning functions which were agency-wide in scope. Initially a planning component was organized under the provisions of Title V, Section 503, of the Elementary Secondary Education Act, but the financial resources proved to be inadequate. In 1967 a special multi-state project on comprehensive educational planning was formed by the United States Office of Education and Utah was selected as a participant. With funds now available, Utah moved rapidly to form a Planning Unit.

During the first year the multi-state project was funded under Section 505 of Title V of the Elementary and Secondary Education Act of 1965 which provided grants for "special projects" designed to resolve problems common to several state education agencies.

The newly created Planning Unit was activated in the organizational structure of the Office of the State Superintendent of Public Instruction under the direction of Utah's project coordinator – the Deputy Superintendent for Administrative Services.

In July of 1968, the completion of a model for employing planning within the Utah State Education Agency represented the culmination of Phase I. A brief introduction to Phase II and III follows immediately but details of the model scheduled to be operative during these phases will be treated in later chapters of this report.

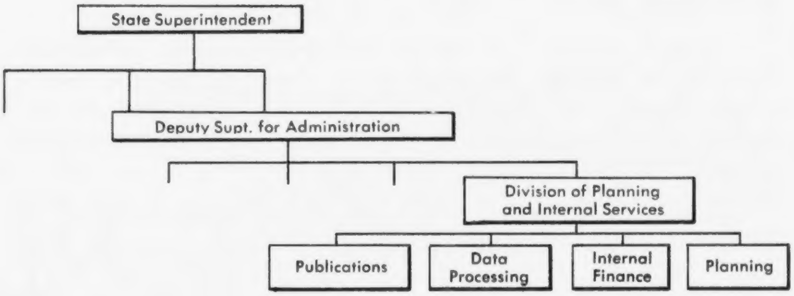
PHASE II – TRANSITORY-OPERATIONAL PHASE

July 1, 1968 began a transitory-operational phase for Utah involving further training of the specialized staff of educational planners and the testing of some of the ideas developed during the initial planning stage. This second phase should play an important role in achieving State Board of Education staff acceptance of a procedure for employing planning within the agency and will serve as a transitional period for overcoming a number of constraints to effective planning.

During Phase II, the Planning Unit became a part of a newly formed, planning and internal services division in the State Agency and has been financed through the commitment of state funds.

ORGANIZATIONAL STRUCTURE

The new division of planning and internal service is located in the organizational structure as follows:


State Superintendent
Deputy Supt. for Administration
Division of Planning and Internal Services
Publications
Data Processing
Internal Finance
Planning

Utah finances the operation of the Office of the State Superintendent on a biennial basis. Therefore, significant changes are not always possible during the second year of a funding period. To some extent, the limitations of the organizational structure for planning during the second year are, therefore, a matter of necessity imposed by financial constraints. Ideally, the planning function should be located near the top in organizational structure and thus be in a more responsive position to the top administration.

During the transitory-operational phase, the Planning Unit is providing some of the technical assistance needed by the several divisions in their planning endeavors and is undertaking some agency-wide planning functions.

The following organizational elements have been created and have begun functioning during Phase II. Each such entity will be treated in greater detail in Utah's Planning Model in the chapters which follow.

Planning Council. The Planning Council is a key element which is assisting the State Education Agency in fulfilling its leadership function through the use of planning capabilities and the potential of the Planning Unit.

The Council includes the deputy superintendents, the division administrators, the administrative assistants, and the head of the Planning Unit. It is considered to be the nucleus of educational planning in the State Agency. The Planning Unit serves to facilitate and coordinate the work of the Planning Council by providing data, technical assistance, any necessary coordination and liaison, and a wide range of other planning competencies.

Program Review Committee. A Program Review Committee, consisting of selected members of the Planning Council, makes recommendations to the Planning Council regarding programs for meeting priority needs and planning proposals and in other ways acts as a steering committee for the Council.

Executive Committee. An Executive Committee, composed of the state superintendent and the deputies, assists the Chief State School Officer in arriving at decisions for the deployment of the resources of the Agency.

Those portions of the Phase II planning operation which have proved operative and effectual will continue on into Phase III as the gradual transition is made from one period to the other. Thus, it is visualized that much of the material regarding strategies, structures, and procedures treated in the next chapter will become foundational or basic for Phase III.

PHASE III – THE THEORETICAL PLANNING MODEL PHASE

A detailed explanation of the theoretical planning model, Phase III, begins with Chapter IV where placement and relationships with other agencies are discussed. The explanation continues in Chapters V, VI and VII. The objectives and functions of the

Planning Unit are treated indicating the design, scope and means for achieving the goals of educational planning in Utah. The competencies, size, and estimated cost for the planning unit staff in Utah are itemized. Some alternative staffing plans for the Unit are also illustrated in Chapter VI.

CHAPTER 3

A New Design for Managing Educational Programs in Utah Emphasizing the Planning Model

The material contained in this chapter represents the efforts of a number of people both inside and outside of the Planning Unit to refine a procedural model for employing planning within the State Education Agency. A three-man committee compiled and edited contributions from Agency personnel into an official Agency position paper which constitutes this chapter.

The purpose of this paper is to describe a process for applying better management practices to the operation of the State Education Agency. It includes the adaptation of some of the newer techniques now available and focuses on a change in procedure for developing, approving and conducting programs for educational improvement. It represents a consensus of philosophy among the staff of the Utah State Education Agency regarding educational planning and identifies elements of structure to be used to coordinate and direct the deployment of Agency-wide resources. It also suggests the assignment of various functions or strategies to Agency divisions and details a specific procedure for managing programs for advancing educational improvement in the State. This procedural model was presented to and accepted by the Agency's Administrative Council during the summer of 1968. At that time, the model was validated (officially approved and accepted) and the decision made to implement it in the operation of the Agency. This validation and implementation encompassed only Phase II, Transitory-Operational Phase; Phase III is not yet validated.

A POSITION STATEMENT FOR PLANNING

Planning is a technical process helpful in educational problem-solving and administrative decision-making. Planning (1) defines objectives, (2) identifies major problems, (3) examines principal means to solve these problems, and (4) specific objective bases for evaluation of performance and outcomes.

To assist the Agency in more effectively performing its leadership responsibilities there is a need for the technology of planning in:

1. Setting goals of education.
2. Determining the most critical unmet educational needs in the state.
3. Developing solution strategies to meet these needs.
4. Designing school improvement projects.
5. Planning for needed educational changes.

To utilize the technology of planning effectively the State Agency should establish certain capabilities. These include:

1. A well defined, broadly understood and endorsed *procedure for employing educational planning* within the agency.
2. Personnel within each division trained in planning techniques such as future forecasting, systems approach, needs assessment, and simulation.
3. A specialized staff of educational planners.
4. An information management system.
5. The capability to provide coordination and leadership to other educational agencies and to agencies doing educational planning.

As the State Agency fulfills its responsibility for advancing educational improvement, it will require an emphasis on leadership. Therefore, all divisions in the agency will, by necessity, devote a greater portion of their time and resources to planning.

Each division will improve its capability to develop carefully prepared plans to perform its responsibilities.

A Planning Unit will be needed to provide technical assistance to the several divisions in their planning endeavors and to undertake certain planning functions which are agency-wide.

The Planning Unit would carry out the following responsibilities:

1. Provide technical assistance to the divisions by:
    a. Performing system analyses.
    b. Developing PERT networks.
    c. Providing helpful data.

   d. Providing mathematical and simulation models.
   e. Performing cost-benefit analyses.

2. Undertake certain planning functions that are agency-wide such as.
   a. Assessing the critical educational needs of the state.
   b. Providing analyses and process for establishing priorities.
   c. Planning statewide educational change.
   d. Acting as liaison between the State Education Agency planning functions and the planning functions of other agencies affecting education.
   e. Coordinating the development of comprehensive long-range plans for advancing educational improvement for the State of Utah.

The Planning Unit would not assume responsibilities as:

1. Doing educational research.
2. Developing a blueprint for the operating divisions.
3. Administering school improvement projects.
4. Evaluating programs and projects.
5. Being an internal quality control agency.

STRATEGIES, STRUCTURE AND PROCEDURE

Significant recent developments both within and external to the Utah State Education Agency have created a demand for more systematic procedures for providing leadership to the advancement of education in the State of Utah.

Rationale

Influences Within The Agency. For two years the Utah State Education Agency has been involved in an eight-state project, *Designing Education for the Future.* This project involves a study of society as it may exist in 1980 in an attempt to identify needed changes in education. By the end of the 1968-69 school year, the study committees that have been working on the various areas encompassed by the project will have completed their work. The reports of these committees will identify some appropriate goals and objectives as well as emerging educational needs.

During the past fifteen months the Agency has also been involved in a seven-state project, *Comprehensive Planning in State*

Education Agencies. This project, administered by Utah, has considered the means whereby planning technology could be used to improve the leadership capability of the State Education Agency through the establishment of an agency-wide planning process.

The ultimate focus of both these projects is the improvement of the State Education Agency's effectiveness in providing the necessary services and state-wide leadership for program changes selected for solving the critical problems of education.

These two studies and longitudinal projections, based upon present trends, portend an increasing cost of staggering proportions for operating the State Education Agency if programs are conducted in the future as they have been in the past. Because of the present and anticipated future scarcity of Agency resources in relation to overall demands, the Agency must choose from among many competing programs those of greatest priority. It must also select the optimum means from several alternatives for achieving the priority program objectives and must assess the degree to which the objectives are attained. These difficult choices and judgments can be made if adequate program planning and program management capabilities are developed within the Agency. Aspects of both of these studies have dealt with these two fields of administrative activity and have noted many inadequacies in present management practices.

Influences External to the Agency. In addition to the developments within education that point the way for improved program planning and more effective management practices, there are pressures for change from outside influences that cannot be ignored.

The Council on State Governments has urged the chief executive officers in each state to organize for planning services at two levels – one level covering the whole gamut of state development functions and their relationships, the other covering the preparation of precise plans for each department of state government.

In the executive branch of Utah State government, the Office of State Planning has been operative for several years. Recently a grant was received by that office to coordinate the educational planning endeavors of the Coordinating Council of Higher Education and the State Board of Education with those of the Governor's Office. This program requires specific development of educational plans by this State Education Agency that will mesh with those of other state level educational plans.

As the responsibility for the administration of ESEA Title III funds shifted from the U.S. Office of Education to the state education agencies, concern was felt for the capabilities of these agencies to manage these programs. As a result, the guidelines for developing state plans for administering Title III programs are encouraging state agencies into a planning mode. This is representative of the new style of expectation acompanying many federal programs.

With the increasing competition for local, state, and federal funds derived from taxation, all governmental agencies are being forced to provide more adequate data to justify requests for more revenue. In Utah, the 1965 Legislature established the Office of Legislative Analyst to assist the Legislature in determining the cost-effectiveness of ongoing programs and the potential cost effectiveness of the new programs proposed by the introduction of new legislation.

This approach is traceable to a national movement, wherein a Program Planning and Budgeting System (PPBS) is being adopted. This system, developed by the Department of Defense and imposed upon other departments of federal government has been devised to improve planning and program management in all governmental agencies. This movement is receiving enthusiastic support in Utah by the Legislature and the Executive Branch and is being urged upon the various state departments.

Rationale for Change. Fortunately, numerous techniques and systems have been developed and utilized in government and industry to effect better planning and management practices and recently much thought has been given to their application to education. Current thinking describes management as the art of planning, organizing, motivating and controlling human and material resources and their interaction in order to attain a predetermined objective. This is a broader activity than administration which focuses on the implementation of policy. Management focuses on the process of decision-making about the use of people and resources to reach stated objectives.

A Management Process

The advent of a new look sometimes poses a threat to personnel in existing organizational structures where areas of responsibilities and activities seem to be clear-cut and purposeful. Yet, the gradual addition of new programs over a period of time has resulted, in many instances, in a duplication of functions and a wasteful deployment of resources. The following management process has been developed to maximize the ability of the agency to advance educational improvement in the State.

The management model includes three parts:

1. The *strategies* to be used to: (a) identify unmet educational needs, (b) establish priorities, (c) generate solution ideas,

(d) develop projects for testing various solution ideas, (e) evaluate processes and results, and (f) diffuse approved new practices.

2. The planning *structure* to be used by the agency to: (a) coordinate and direct the deployment of agency-wide resources, and (b) assign the various functions and tasks identified as strategies to the agency divisions.

3. The *procedures* to be followed to: (a) obtain the information needed for decision-making, (b) involve the personnel who need to be involved in approving programs, and (c) allocate resources, both human and financial, to approved programs.

STRATEGIES

In giving leadership to educational change, the State Education Agency will use the problem-solving approach. The four major strategies involved are:

1. Identifying problem areas
   a. Assessing unmet educational needs
   b. Setting unmet needs priorities
2. Developing problem solutions
   a. Analyzing problems
   b. Generating alternative solutions
   c. Selecting and testing proposed strategies
3. Effecting changes in existing programs
   a. Disseminating information
   b. Diffusing endorsed practices
4. Evaluating programs
   a. Assessing the quality of educational programs
   b. Determining effectiveness of solution strategies

Assignment of Problem-Solving Strategies. The operating divisions of the State Education Agency have always had as their major mission the improvement of educational programs. They have been handicapped, however, by the absence of any precise procedure for (a) identifying the critical educational problems in the State, and (b) for developing in a systematic manner viable solutions to these problems. These two important functions, problem identification and solution development, will become the major leadership responsibility of the Planning Unit and the Research and Innovation Division. The other divisions will have the responsibility for the diffusion of endorsed practices selected for the improvement of education in the State. Hence, the management responsibility for the four problem-solving strategies described earlier would be assigned as follows:

Strategy	**Leadership Responsibility Assigned to:**
1. Identifying Problem Areas through: a. assessing unmet educational needs b. setting unmet needs priorities	Planning Unit
2. Developing solutions to priority problems through a. analyzing problem b. generating alternative solutions c. selecting and operating proposed solution strategies	Planning Unit or Research & Innovation Division
3. Effecting changes in existing programs through: a. disseminating information b. diffusing of endorsed practices	Elementary & Secondary Special Educational Services Vocational Education Instructional Media Teacher Personnel School Lunch Auxiliary Services Vocational Rehabilitation Services
4. Evaluating programs a. assessing the quality of educational programs b. determining effectiveness of solution strategies	Research & Innovation Division and Special Task Forces

STRUCTURE

Two aspects of structure are important: (1) the establishment of a planning and program review mechanism, and (2) the assignment of the four problem-solving strategies to specific divisions within the agency.

It is very important that an agency-wide planning mechanism be established as a means of coordinating efforts to improve educational practices. The new approach establishes responsibility for planning activities and the procedures to be followed for project approval. The planning procedure and project approval process encourages individual staff members to participate in solution generation. However, to assure the methodical development of solutions to priority problems, the major responsibility for various projects has been assigned to various divisions of the State Education Agency as follows:

1. The Research and Innovation Division will have major responsibility for generating solution strategies and primary responsibility for the development of project proposals that test hypothesis and are research or experimental in orientation.

2. The Planning Unit will have primary responsibility for the development of project proposals that are not research oriented but require forecasting future conditions or requirements.

3. Specialists within the Agency will maintain their traditional responsibility for projects that do not require extensive planning or research and development such as workshops, seminars, and inservice institutes.

The new approach involves the division administrators, and the deputy superintendents in a viable screening process to develop recommendations for the superintendent in the decision-making process.

STRUCTURE ELEMENTS

To effect this procedure, a Planning Council, a Program Review Committee, the Planning Unit, and an Executive Committee have been established as the four elements in the planning mechanism as illustrated below:

EXECUTIVE COMMITTEE
Superintendents

Program Review Committee

PLANNING COUNCIL
Deputy Superintendents
Division Administrators
Administrative Assistants

Planning Unit

Planning Council: The division administrators, the deputy superintendents, and the administrative assistants to the superintendent comprise the membership of the Council. The deputy superintendent for administration is the chairman of the Council, and the head of the planning unit serves as executive secretary to the Council.

Planning Unit: The personnel of the Planning Unit serve in a staff function to the Council.

Program Review Committee: The deputy superintendent for instructional services, the deputy superintendent for administrative services, and the administrator of the Planning Division comprise the membership of the Program Review Committee. The deputy superintendent for administration serves as chairman of the committee. The administrative assistant serves as executive secretary to the committee, and the coordinator of the internal accounting section serves as special assistant to the committee.

Executive Committee: The State Superintendent and the deputy superintendents comprise the membership of the Executive Committee. The State Superintendent serves as chairman and the administrative assistant for special projects serves as executive secretary to the committee.

The Operating Divisions: The modified functional roles assigned to the divisions are more specific than previous assignments in terms of scope or range of activities. The purpose is to reduce duplication and to bring a greater concentration and specialization of function to the efforts of the agency.

The area of responsibility of a division will no longer include a range of activities from needs assessment through research and development to implementation and subsequently evaluation of the achievements related to programs. Rather, a division's responsibility will permit it to concentrate its efforts on one of these functions. It is recognized, however, that good management requires some limited activity in each of these functions as leadership is given to school improvement. The determining factor for limiting the range of activities necessary in the normal management role will be related to budget allocations. If the function requires a budget allocation for a survey, evaluation, in-service training, workshops, or other related special projects, the activity will be deemed to be beyond the normal management function. Requests for conducting such activities would be submitted as a special project proposal to be reviewed as to its appropriateness and its relative value.

PROCEDURE

Projects Requiring Research and Development. The procedure for submitting proposals for approval is best depicted on the attached "Involvement Models." (Figure 1.) The figure portrays the tasks of each element in the structural mechanism established for identifying and solving educational problems. A careful study of this model is recommended. Briefly, the following are the procedures to be followed for project approval:

1. The Planning Unit will identify problems through a continuous process of needs assessment.

2. The Planning Council will propose a priority of educational problems based upon data provided by the Planning Unit.
3. The Planning Unit will use systems technology in developing systems analyses of assigned problems.
4. Based upon the nature of the problem, the Planning Unit or the Research and Innovation Division will generate preliminary alternative proposals for the Planning Council and Executive Committee.
5. If approved, a planning task force will be assigned to develop a detailed plan.
6. The Program Review Committee will critique the plan for the Planning Council in terms of:
    a. Focus on priority needs
    b. Harmony with other programs
    c. Potential for achieving program objectives
    d. Analysis in terms of cost-benefit
7. The Planning Council will use these data as a basis for recommendation to the Executive Committee, including the allocation of resources (Agency personnel and funds) for projects approved.
8. The Executive Committee will make a decision based upon the Planning Council's recommendation and other data.
9. A project task force (personnel from within the Agency and/or outside the Agency or from school districts) will be assigned to conduct the project.
10. Evaluations for each project will be provided by or assigned through the Research and Innovation Division.

THE ROLES OF VARIOUS ORGANIZATIONAL UNITS IN IMPLEMENTING PROJECTS

Role of Research and Innovation Division. This division will:

1. Accept assignment of problems requiring research and development from the Planning Council and generate ideas for alternative solutions.
2. Coordinate the development of preliminary plans selected from among the various alternatives including an analysis of the resources (personnel, financial and time) needed to develop a plan.

3. Formulate planning task forces to develop detailed plans as assigned by the Executive Committee.
4. Develop and coordinate evaluations of projects.

Role of Planning Unit. This unit will:

1. Identify problems through a continuous process of needs assessment.
2. Assess the adequacy of present evaluation programs and make recommendations for modifications as a basis for obtaining adequate data for a needs assessment.
3. Perform a systems analysis of priority problems assigned by the Executive Committee as a basis for providing adequate information to the Planning Council on the nature of the problem, the scope, and the interrelationships and interactions that exist among other elements of the system as they impinge upon the problem.
4. Accept assignments of problems from the Planning Council which require future forecasting or simulation techniques and generate ideas for alternative solutions.
5. Coordinate the development of preliminary plans selected from among the various alternatives including an analysis of the resources (personnel, financial and time) to develop a plan.
6. Formulate planning task forces to develop detail plans as assigned by the Executive Committee.
7. Accept other planning activities as assigned by the Planning Council or the Executive Committee.

Role of Program Review Committee. This committee will:

1. Receive project proposals from the Planning Unit, the Research and Innovation Division, and from operating divisions.
2. Screen project proposals and submit an analysis of each to the Planning Council. The analysis will include data regarding:
   a. Relatedness of the proposal to established agency priorities,
   b. Harmony of the proposal with other ongoing programs, and
   c. Effectiveness of the proposed project in terms of costs and benefits to be derived.

3. Analyze programs and projects as assigned by the Planning Council or the Executive Committee.

Role of Planning Council. This council will:

1. Request data from the Planning Unit relative to statewide educational problems.
2. Develop and recommend State Agency goals and a priority list of programs for educational improvement to the Executive Committee.
3. Assign priority problems to either the Planning Unit or the Research and Innovation Division, dependent upon the nature of the problem.
4. Receive analytical data on preliminary plans from the Program Review Committee as a basis for making recommendation to the Executive Committee regarding the use of Agency resources for developing detailed plans.
5. Request additional data from the Program Review Committee as needed.
6. Receive detailed data on final plans from the Program Review Committee as a basis for making recommendations to the Executive Committee. Recommendations will include specific Agency resource allocation (personnel, finances, and time) necessary for the development of detail plans.
7. Receive decisions from the Executive Committee. On approved projects, assign staff to task forces and designate task force leader. Allocate other resources to project development.
8. Fulfill other assignments directed by the Executive Committee.

Role of Executive Committee. This committee will:

1. Receive goal and priority recommendations from the Planning Council.
2. Establish goals and priorities for Agency-wide programs and projects for educational improvement.
3. Direct Planning Unit to perform a system analysis of selected priority problems.
4. Receive recommendations and supportive data on preliminary plans for project proposals.

5. Make decisions regarding the allocation of Agency resources for developing detailed project plan development.
6. Receive recommendations and supportive data on final detail plans for project plan development.
7. Make decisions regarding the conduct of projects.
8. Request plan development and other planning services as needed.

Projects Not Requiring Simulation nor Research or Development. Certainly not all projects or proposals are of sufficient scope and involvement as to require the complete agency-wide consideration that the "Involvement Model" in Figure 1 provides. A vast body of activities promoted and carried out within single divisions such as conducting certain workships for districts, producing some manuals and guides, or carrying out specific regulatory or supervisory activities of districts, and so on, will not necessitate a broad inter-divisional assessment. Yet even these types of activities should be perused for their general contribution to attainment of Agency priorities if they involve a certain level of resource expenditure. For this purpose an abbreviated and more expedient "Involvement Model" has been developed. A schematic of this model is presented in Figure 2.

This model for projects not requiring simulation or research and development treatment can be briefly summarized as follows:

Assuming that a continuous need assessment program is in operation modifying the goals and priorities of education, an established division would have this information as input to its activites. With this background data available, division personnel would generate ideas for problem solutions, design and conduct the project. The Research Division or the Planning Unit could be called upon for technical help or could be bypassed. However, if additional funds beyond those available to the division are needed to conduct the project, then it would be necessary to submit it for analysis to the Program Review Committee to compete with other proposals for discretionary funds available to the Agency.

FIGURE 1

AN INVOLVEMENT MODEL FOR IDENTIFYING AND SOLVING EDUCATIONAL PROBLEMS

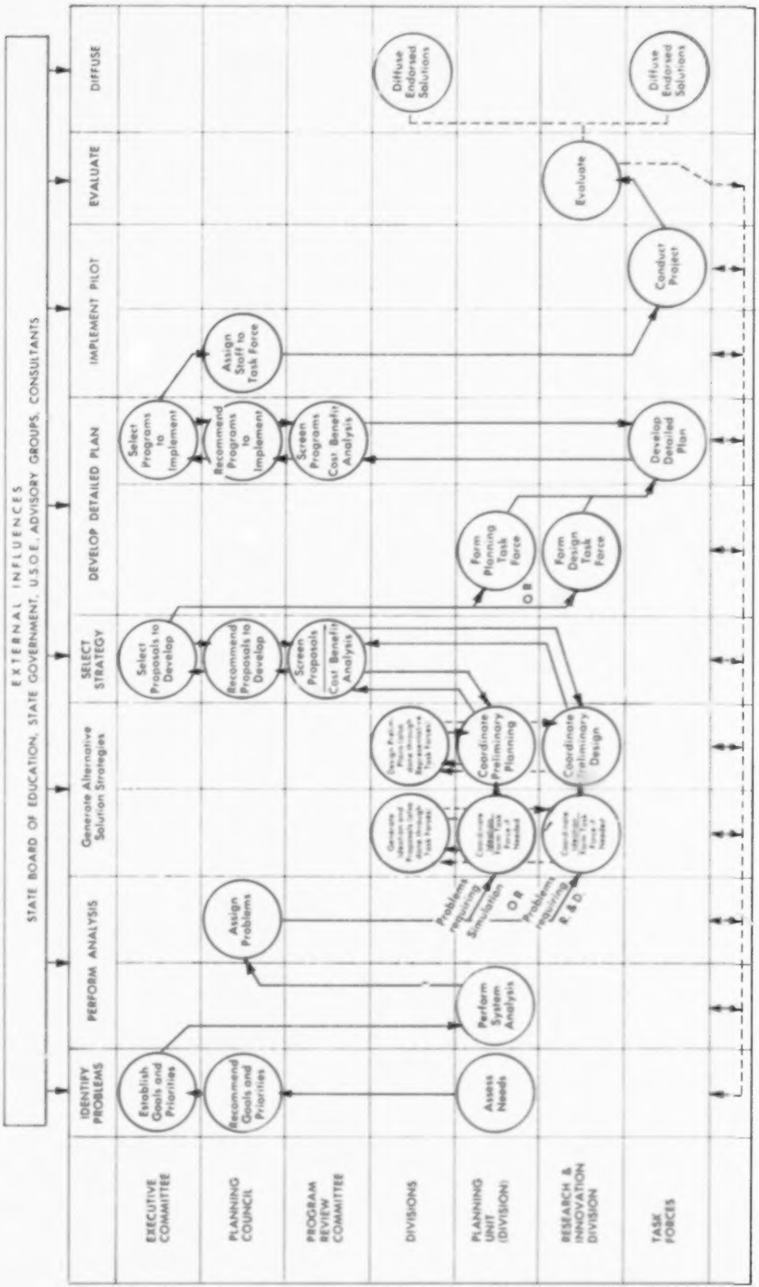
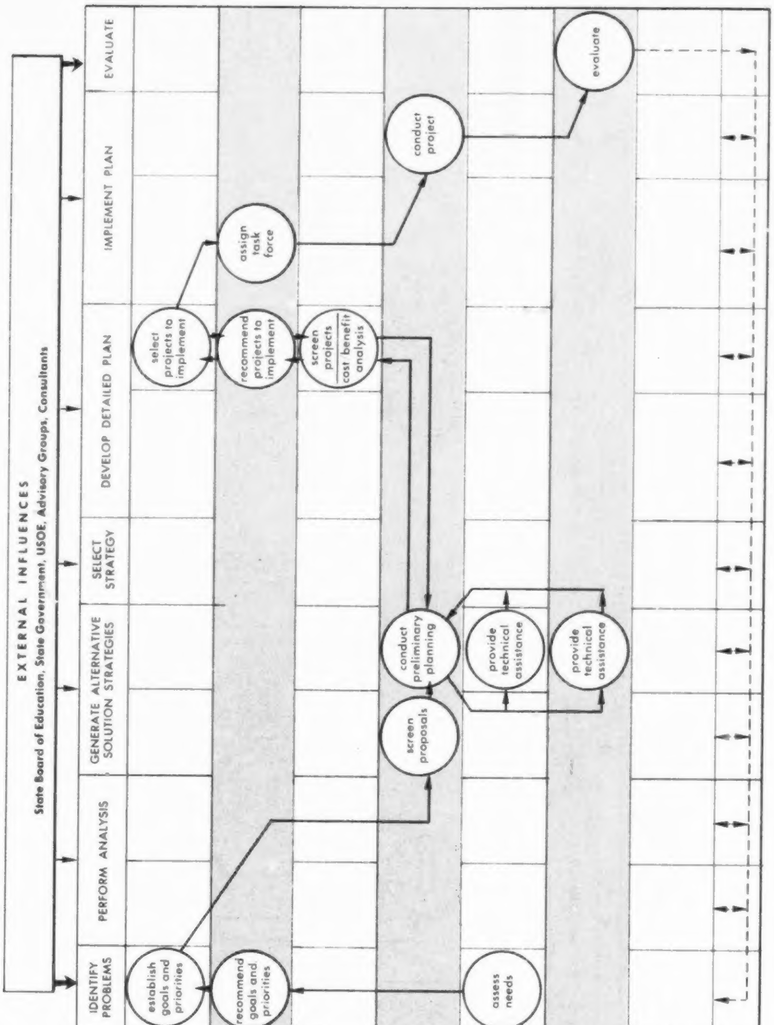

EXTERNAL INFLUENCES
STATE BOARD OF EDUCATION, STATE GOVERNMENT, U.S.O.E., ADVISORY GROUPS, CONSULTANTS
IDENTIFY PROBLEMS
PERFORM ANALYSIS
Generate Alternative Solution Strategies
SELECT STRATEGY
DEVELOP DETAILED PLAN
IMPLEMENT PILOT
EVALUATE
DIFFUSE
EXECUTIVE COMMITTEE
PLANNING COUNCIL
PROGRAM REVIEW COMMITTEE
DIVISIONS
PLANNING UNIT (DIVISION)
RESEARCH & INNOVATION DIVISION
TASK FORCES
Establish Goals and Priorities
Recommend Goals and Priorities
Assess Needs
Perform System Analysis
Assign Problems
Problems requiring Simulation
OR
Problems requiring R & D
Coordinate Preliminary Planning
Coordinate Preliminary Design
Select Proposals to Develop
Recommend Proposals to Develop
Screen Proposals
Cost Benefit Analysis
Form Planning Task Force
OR
Form Design Task Force
Select Programs to Implement
Recommend Programs to Implement
Screen Programs
Cost Benefit Analysis
Develop Detailed Plan
Assign Staff to Task Force
Conduct Project
Evaluate
Diffuse Endorsed Solutions
Diffuse Endorsed Solutions

FIGURE 2

AN INVOLVEMENT MODEL FOR PROJECTS NOT REQUIRING SIMULATION OR R. & D.


EXTERNAL INFLUENCES
State Board of Education, State Government, USOE, Advisory Groups, Consultants
IDENTIFY PROBLEMS
PERFORM ANALYSIS
GENERATE ALTERNATIVE SOLUTION STRATEGIES
SELECT STRATEGY
DEVELOP DETAILED PLAN
IMPLEMENT PLAN
EVALUATE
EXECUTIVE COMMITTEE
PLANNING COUNCIL
PROJECT REVIEW COMMITTEE
DIVISIONS
PLANNING UNIT Division
RESEARCH AND INNOVATION DIVISION
TASK FORCES
establish goals and priorities
recommend goals and priorities
assess needs
screen proposals
conduct preliminary planning
provide technical assistance
provide technical assistance
select projects to implement
recommend projects to implement
screen projects
cost benefit analysis
assign task force
conduct project
evaluate

CHAPTER 4

The Theoretical Model - Phase III Planning Unit Placement and Relationships

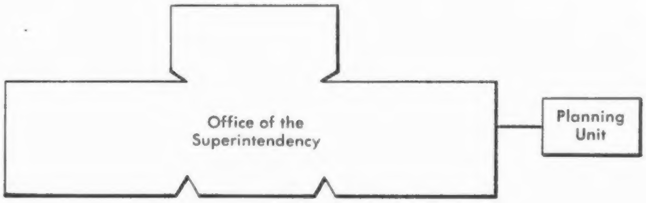
PLACEMENT

The location of the specialized staff of educational planners in the State Education Agency organizational structure during the planning and transitory stages was not as crucial a factor as it will become in the future. During the implementation of the theoretical model stage or Phase III, placement of the Planning Unit will take on an increasingly important dimension. Planning has to be continuous, resulting from natural response to the needs of program managers. It has to have a direct line of communication to the chief decision-maker in order that an adequate set of alternatives may be developed, discussed, and accepted.

A Planning Unit must not be in the business of program operation. In military terms, the centralized systematic planning capabilities must be considered as a staff responsibility and with staff relationships. The Planning Unit needs to have sufficent status for, and be in a position to guide the planning endeavors in the operating divisions; therefore, the Unit staff should be directly responsible to the State Superintendent of Public Instruction. In that role, the Unit will have the freedom and flexibility to stimulate, combine, and articulate state-wide planning efforts.

After considerable study, discussion, and consultation, it is recommended that eventually the Planning Unit be located in the organization structure of the State Agency as depicted in Figure 3.

FIGURE 3



To be most effective, the Planning Unit should hold a staff position serving the State Superintendent and his deputies. Here it can best provide the raw material for decisions in terms of clearly formulated priority choices and alternative courses of action, complete with implications and consequences determined and explicitly stated.

To a great extent, present administrative practices demonstrate this concept of superintendency; a more formalized organizational structure implementing this concept is yet to be realized. Through such an arrangement, agency-wide access to the Planning Unit would be facilitated. Services from the Unit would be directly available to the State Superintendent, each deputy, and available across the entire agency. Technical planning assistance would be readily accessible to any and each office, division, or individual staff member.

RELATIONSHIPS

RELATIONSHIPS OUTSIDE THE STATE EDUCATION AGENCY BUT WITHIN THE EDUCATIONAL FAMILY

The State Education Agency should be the focal point in providing leadership to Utah's system of education. It should contribute significantly to the improvement of state and local education programs and have the resources and staff to provide leadership throughout the State. Comprehensive planning is a critical component of the Agency's leadership potential and activities.

Local School Districts. Rational planning at all levels is essential if the State's educational needs are to be met. Reliable information concerning the effectiveness of existing local education programs must be obtained and evaluated in order to better coordinate and improve present programs and to develop new programs to fill unmet needs. Local initiative and responsibility for planning should be encouraged and stimulated. Each school district must plan the use of local, state, and federal funds to meet local needs. Many funds that districts now receive are earmarked for special purposes and the number of programs designed to meet special needs has increased until some districts employ coordinators to integrate the various programs into a comprehensive plan adapted to local needs. However, since the concept of planning capabilities being proposed is somewhat new, local districts need assistance not only with district planning but also in extending local coordination and short-range planning to long-range regional and statewide planning and coordination. The Planning Unit of the State Education Agency will fill this need by providing technical planning assistance to local districts in a fashion similar to that used in providing assistance to divisions within the Agency. This service will supplement rather than supplant local planning.

Several examples of how the Planning Unit will serve local districts in Utah follow:

1. It will provide technical assistance to districts including system analysis, PERT, simulation, and cost-benefit analysis.
2. It will help coordinate educational planning in the State and help to channel the output of federal and state assistance to local districts. A program of systematic statewide planning and assessment must be established if unnecessary duplication is to be avoided and maximum efficiency is to be attained.
3. It will provide personnel development. The unit will not do the actual planning for local school systems but will provide inservice training in planning techniques for district staff members. The Unit has developed a number of workbooks or training manuals based upon the best that is now known about the tools, skills, and methods needed by individuals doing long-range educational planning. These will be shared with district planners.
4. It will provide assessment of critical educational needs.

Regions. It appears very probable that increased regionalization will occur in public education in Utah in the near future. The Planning Unit will encourage regional service centers as a part of the statewide organizational planning structure. Area planning will need to be coordinated with state planning just as local district planning needs mesh with regional and state-wide planning. The Planning Unit will again be required to give leadership to such coordinating efforts.

Other Agencies. In the immediate education family are agencies such as the Society of Superintendents, the Utah Education Association, and the School Boards Association, that exert direct influence and other agencies such as institutions of higher education, the Coordinating Council of Higher Education and the Parent Teachers Association, that exert indirect influence upon public education. All such members of the educational family need to be involved to varying degrees in the educational planning process.

RELATIONSHIPS WITH NON-EDUCATIONAL AGENCIES AND INSTITUTIONS INVOLVED IN PLANNING WHICH AFFECTS EDUCATION

As has been mentioned, the Planning Unit will serve the State Superintendent and his staff by supplying needed information to assist in the making of rational decisions. It will serve as a consultant or source of planning information and technical assistance to local systems in the immediate education family. The Planning Unit will also serve as a liaison among the people of the State, the State Education Agency, and various other agencies involved in planning which affects education.

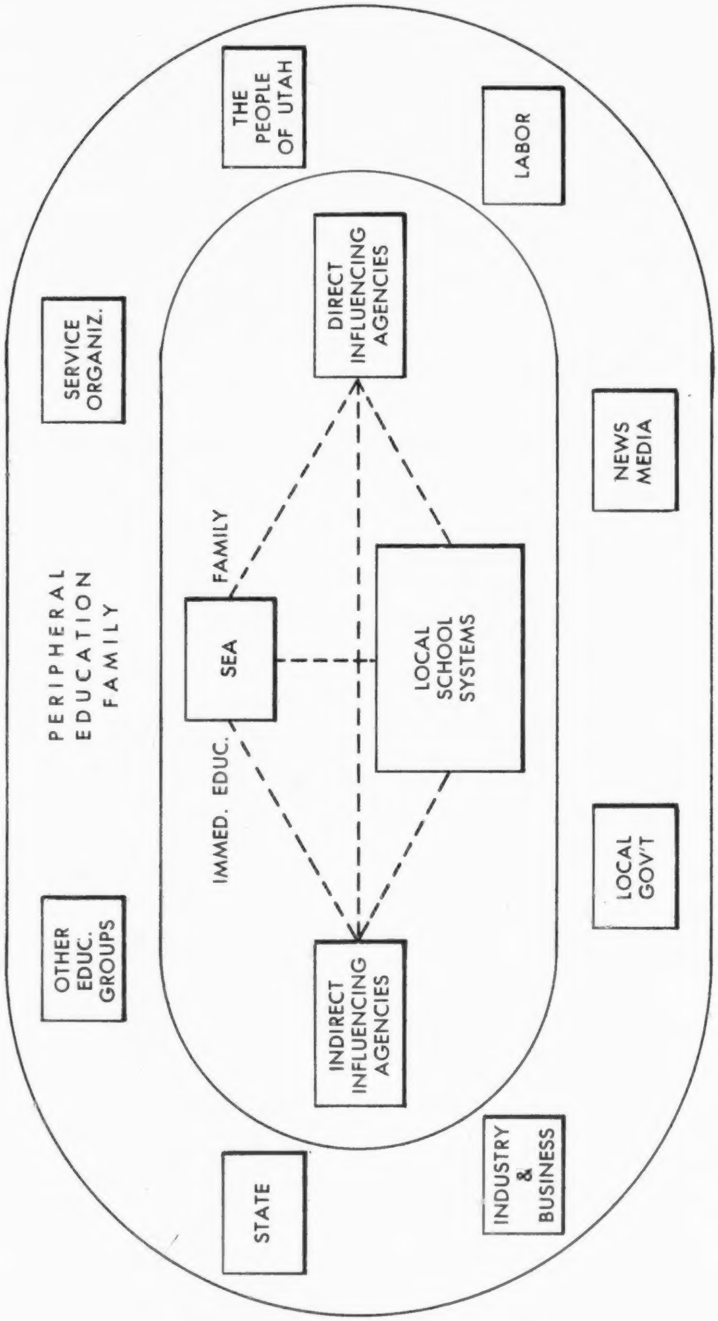
The Unit will launch a program for developing improved relationships with other planning agencies in communities or state. As an initial step, the Unit has acquired membership on the State Planning Commission administered by the Executive branch of government. The next step should be the establishment of an *Inter-Agency Liaison Council*. The Planning Unit should represent the State Education Agency on this Council. Membership should be drawn from such other groups as health and welfare, higher education, industry, business, labor, service organizations, and so on.

Participation in the liaison council would assist the State Education Agency maintain relationship with these various groups and would provide opportunities for interaction and communication concerning educational and community and state planning.

In the past, the lack of effective interaction and communication has resulted in a lack of awareness on the part of the public of the broad scope of the educational program. Community planning requires participation of persons from various organizations including the educational system. Educational planning will require the same type of broad base and involvement if it is to be well received and implemented. Contributions of outside agencies are likely to enhance rather than threaten education. Figure 4, and the accompanying listing portray the general relationship of the Utah State Education Agency with various bodies of government, industry and other entities.

FIGURE 4

RELATIONSHIPS



THE IMMEDIATE EDUCATION FAMILY

STATE EDUCATION AGENCY

LOCAL SCHOOL SYSTEMS

School Board
Superintendent
Administrators
Principals
Teachers
(40 districts)

DIRECT INFLUENCING AGENCIES

Society of Superintendents
School Boards Association
Utah Education Association
(Teachers and Administrators)
U.S. Office of Education
Other

INDIRECT INFLUENCING AGENCIES

Institutions of Higher Education
All Post High School Education
Coordinating Council of Higher Education
Parent Teacher Association
Office of Economic Opportunity (Headstart) (Pre-school)
Other

THE PERIPHERAL EDUCATION FAMILY

OTHER EDUCATIONAL GROUPS (Affiliates)

Association for Supervision and Curriculum Development
Utah Education Association (Board of Trustees)
Elementary Principals Association
Secondary Principals Association
Regional Education Labs
Educational Television
Association of Childhood Education
Education Research Information Center (ERIC)
High School Activities Association
Non-Public Schools

STATE

Community Action Programs
Health and Welfare
Utah Foundation
Womens Legislative Council
Utah Legislators
Utah Legislative Council
Utah Planning Coordinator (Governor's Office)
Utah State Building Board
Utah State Library Board
Utah Taxpayers Association
Utah Mental Health Association
Other State Agencies

LABOR

Labor Unions or representative associations

THE PEOPLE OF UTAH SERVICE ORGANIZATIONS

Rotary
Kiwanis
Jaycees
etc.

INDUSTRY AND BUSINESS

Utah Power and Light
Mountain Fuel
Mt. States Telephone & Telegraph
Litton
Sperry
Hercules
Eimco
Kennecott
Hill Air Force Base
Dugway
Tooele Ordinance Depot
Civil Service Commission (Federal Employees)
Utah Farm Bureau
Employment Security
Downtown Planning Commission
Chamber of Commerce
Pro - Utah
Businesses

LOCAL GOVERNMENT

Mayors – City
Councils – County
Municipal League
Planning (Local)

NEWS MEDIA

TV – (all stations)
Radio – (all stations)
Tribune
Deseret News
Provo Herald
Ogden Examiner
Logan Herald Journal
etc.

CHAPTER 5

Planning Unit Objectives and Functions

DEFINITIONS

Before proceeding with a discussion of the objectives and functions of the Planning Unit, it is appropriate to define several terms as they are used in this report.

Objective. An aim, a goal, a purpose, a mission, a desired state or result to be achieved. The description of objectives in this report provides targets toward which key actions may be directed.

Function. Key actions or jobs to be performed in the accomplishment of objectives or targets.

OBJECTIVES AND FUNCTIONS OF THE PLANNING UNIT

Listed below are some of the major objectives or targets of the Planning Unit. Listed under each are *sample* functions or key actions which lead toward the accomplishment of the objective. at this point, both the list of objectives and the list of functions should be considered *open-ended* since *neither list is comprehensive* and additions will be made to both lists.

OBJECTIVE:

1. *Establish planning as a management resource which educators will use.*

FUNCTIONS:

a. Help educators become aware of the extensive use or application of planning technologies in business, industry, and the military.

b. Through a Planning Council involve administrators from operational divisions in the State Education Agency in planning.

c. Publicize successful projects that received planning assistance in the formative stage.

d. Develop precise planning strategies for goal attainment. These strategies should be individually designed to compensate for restrictive environment, fixed social and political constraints, and other types of nullifying thwarts or blocks.

OBJECTIVE:

2. *Stimulate the formation of technical planning capabilities in the State Education Agency and in local school systems.*

FUNCTIONS:

a. Identify and supplement the training of educational personnel with planning capabilities (i.e., systems analysis, PERT, simulation, cost-benefit analysis).

b. Utilize, as far as possible, special planning competencies of present staff members of the State Education Agency.

c. Procure new and specialized skills necessary for the effective functioning of the personnel in the State Education Planning Unit.

d. Assist local school districts in locating and training educational planners.

e. Facilitate and develop staff competencies in planning through the use of the tools of systems approaches which are appropriate for planning, managing, and evaluating programs and their effectiveness.

f. Involve key representatives from divisions of the State Education Agency and from local school districts on advisory committees to planning operations.

g. Schedule on-site visits to schools and districts to provide technical planning assistance.

h. Provide assistance to fledgling planning units.

i. Develop strategies for the recruitment and initial orientation of potential planners.

j. Develop workshops, short courses, and similar activities for the training of planners.

k. Assist in the development of legislation needed to provide satisfactory support for the planning function at all levels of education.

l. Identify problems or problem areas where planning assistance is needed.

m. Formulate alternative plans to achieve objectives and develop alternative solutions to problems using planning technologies.

n. Reduce alternatives to best methods possible within limitations of present and projected future resources.

o. Develop internal planning capabilities to help:
   (1) Improve internal management skills.
   (2) Retrain personnel.
   (3) Refine and renew procedures.
   (4) Develop and improve activities.

Objective:

3. ***Assist educators to anticipate and cope with change which will greatly affect education in the future (five and ten-year periods and beyond).***

Functions:

a. Plan statewide educational change.

b. Provide enrollment forecasting, revenue projections, and other helpful data for anticipating change.

c. Use accurate and meaningful data about education as input to the planning process. Stimulate the establishment of a State Education Agency resource or data bank made up of information necessary for effective educational planning at all levels.

d. Identify data generation points and establish communication links with them.

e. Establish communication channels as a means for informing educators of available information.

f. Keep planning strategies and methods current with regard to changing conditions.

g. Assist educational administrators to control, direct, and manage change. Help educators meet oncoming change, cause desirable change, and prevent undesirable change in public school education.

h. Concentrate efforts on individual problems and/or problem areas which are in need of planning assistance and assigned to the Unit by the State Superintendent.

Objective:

4. ***Provide a procedure for coordinating and interrelating educational planning within the State Education Agency***

with other agencies and institutions engaged in planning which may affect public elementary and secondary education.

FUNCTIONS:

a. Establish or develop effective relationships:
   (1) Within the State Education Agency.
   (2) Within the educational family.
   (3) Among other groups or agencies planning for education.

b. Facilitate communication among the State Education Agency divisions, the educational community, departments of government and the public.

c. Act as liaison between the State Board of Education planning functions and the planning functions of other agencies affecting education.

d. Coordinate the development of comprehensive long-range plans for advancing educational improvement for the State of Utah.

e. Help to avoid duplication of planning effort and assist one group to profit from the experience and efforts of another.

f. Serve as the resource center for educational planning assistance in the State.

g. Organize various planning committees when appropriate.

OBJECTIVE:

5. *Help assess the educational needs of the State.*

FUNCTIONS:

a. Design a strategy for critical-needs assessment.

b. Identify needs by procedures such as:
   1) Remaining alert and sensitive to the expression of needs.
   2) Collecting statements of need from organizations and institutions such as teachers' associations, school districts, colleges and universities, and so on.
   3) Conducting periodic "unmet-needs conferences" to identify and to focus on critical problems or needs

through wide involvement of the citizens of the State.

4) Surveying professionals, pupils, organizations, literature, and research to identify the most critical and most frequently perceived educational concerns.

c. Analyze needs by procedures such as:[1]

1) Making sure the identified need is an accurate expression of conditions.

2) Validating the expressed need to determine if it is in fact a need; that is, does it reveal a deficiency.

3) Investigating to see that within the given environment, this is an accurately defined, internally validated discrepancy – a central need, and not just a symptom or a peripheral expression.

4) Determining where this need fits into a priority of needs requiring attention; that is, a weighting procedure to determine if this is the need to be satisfied first or if there are others that are either more crucial or that should be resolved first for logical strategic reasons.

5) Discovering or measuring how much of a deficiency or discrepancy exists in the validated need.

6) Determining whether this need can be feasibly satisfied under existing conditions and with the resources available.

d. Analyze "what is," determine "what ought to be," and design procedures and alternatives for traveling from the one to the other with available and anticipated resources.

e. Help provide a structure for assimilating studies of educational needs and goals into State Education Agency and public school programs.

OBJECTIVE:

6. *Serve as a catalytic agent among representative groups for the purpose of establishing educational priorities.*

FUNCTIONS:

a. Develop a process for determining educational priorities.

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[1] Rowan C. Stutz, Utah State Plan for ESEA Title III

b. Help initiate studies to validate, reformulate, and reconstitute priorities on a statewide basis.
c. Encourage continual reexamination and updating of educational priorities.
d. Gather information and provide analyses relevant to priority needs.
e. Generate and develop imaginative techniques for determining priority needs.

OBJECTIVE:

7. *Assist the State Board of Education to define and clarify educational goals and objectives and to organize objectives into a measurable format.*

FUNCTIONS:

a. Stimulate the organization of a working committee to identify those objectives that have been defined independently by various groups such as the Goals and Objectives Committee of the *Designing Education for the Future Project* and the Governor's Study Committee.
b. Suggest to the Planning Council that task forces be assigned to further define objectives in subject-matter areas.
c. Aid in synthesizing educational objectives that have been identified from various sources.
d. Secure consultant help to place objectives into behavioral terms.
e. Assist in the development of legislation needed for implementing important objectives.

OBJECTIVE:

8. *Assist in the continuous evaluation of educational performance and output.*

FUNCTIONS:

a. Help by providing a structure or plan for continuous evaluation of educational performance and output.
b. Develop designs for data gathering.
c. Assist in determining the effectiveness, efficiency, and relevance of programs in terms of stated objectives.

OBJECTIVE:

9. *Provide stimulus and assistance in the development of long-range comprehensive statewide master plans for public education in Utah.*

FUNCTIONS:

a. Provide technical planning assistance to help in the development of long-range comprehensive master plans for improving elementary and secondary education in Utah based upon all the inputs and expertise available.

b. Help the State Education Agency to look ahead to the needs in education, and to consider the long-range future needs of society and assist in shaping that future through the development of a dynamic master plan.

CHAPTER 6

Planning Unit Personnel and Budget

Continuing the treatment of the Theoretical Planning Model, Phase III, this chapter examines the types of capabilities recommended for the personnel of the Utah Planning Unit. Alternative means of staffing a planning operation in Utah are considered; one of these alternatives is recommended for implementation.

PERSONNEL OF THE PLANNING UNIT

MINIMUM CAPABILITIES NEEDED IN A PLANNING UNIT

In regards to manpower needs of a state education agency planning unit, Kenneth H. Hansen[1] writes:

> Experience at both the state and local levels has shown that there is a critical shortage of persons either already trained for planning or available for training and upgrading to perform the planning functions. Planning on a long-range and comprehensive basis is not something to be done in his spare time by a person whose primary assignment is in some other operating field. . . . Estimates of the number of persons needed to staff a completely-functioning state education agency planning unit vary with (a) the extent to which the unit can coordinate its work with an overall state planning authority and (b) the extent to which the planning functions are regionalized within the state. But we are not talking in terms of one or two persons – rather, a half dozen – or in complex situations – double or triple that number. No state can reasonably expect that the planning personnel needed can simply be borrowed from other jobs or that they can be supported indefinitely by special funds. Money and manpower will both require specific state allocation of resources.

GENERAL TYPES OF CAPABLITIES IDENTIFIED BY VARIOUS AUTHORS

Walt Le Baron,[2] a Washington intern in education, in expressing his own personal position (not as a matter of policy of the USOE), suggests that there is a need in state education agencies for the following five general types of expertise:

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[1] Kenneth H. Hansen, **Planning for Educational Change: A Statewide Approach,** (Education Commission of the States, Denver, Colorado: March 1968).

[2] Walt Le Baron, **A Training Program for Educational Planners,** (United States Office of Education, Bureau of Elementary and Secondary Education, Office of Program, Planning and Evaluation, Washington, D.C.: date unknown).

1. An educational futurist.
2. A senior planner of systems analysis
3. A senior planner for information systems
4. A senior politico-economic planner
5. A senior socio-educational planner

Perry Rosove,[3] writing for Systems Development Corporation, speaks of the educational futurist as a vital, new type of expert for educational planning. He extends the proposition that this type of specialist would probably associate himself with problems centering around validation and reliability of trend analyses and the extant theories of psychological and social causation. Rosove states, however, that involvement specifications and training for this type of educational planner are still in the developmental stage. This indicates that additional experience in this general area of prognostication and forecasting will tend to generate job specifications for this type work.

Jack A. Culbertson[4] categorizes the emergent planning technologies into three general but inter-related traditions. He describes these as educational planning based upon: (1) operations research, (2) planning-programming budgeting-system, and (3) manpower projections. These three traditions plus the techniques or tools associated with each seem to encompass Culbertson's view of the planning spectrum for education.

MORE SPECIFIC COMPETENCIES DESCRIBED AS SKILLS OR TOOLS FOR THE PLANNER

The knowledge, intellectual resources,or specific types of expertise might be termed the tools needed in a planning unit. Some of the more commonly known types of expertise which will be classified as tools in this report are PERT, Cost-Benefit Analysis, PPBS, Operation Analysis, and other *Systems Approaches*. There seems to be consensus among most authorities that these tools are encompased by the one category – systems analysis capabilities.

Another valuable analytical technique is systems simulation. This is a method of imitating interrelationships between men, machines, money and other resources plied in different mixes against environmental constraints. A simulation model or dynamic representation of reality is also a method used chiefly to examine likely consequences of alternatives in order to better choose between the alternatives. Computers are used to simulate rapidly the outcomes of various mixes.

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[3] Systems Development Corporation, Progress Report #2: **Educational Policy Research and Support Center,** Santa Monica, California, November 30, 1967, 37-40.

[4] Jack A. Culbertson, "State Planning for Education," **Planning and Effecting Needed Changes in Education.** Edgar L. Morphet and Charles O. Ryan, editors, (New York: Citation Press 1967), pp. 266-280.

OPERATION PEP has outlined a training program designed to familiarize educators with planning techniques which are adaptations from management technologies of other disciplines. Donald R. Miller[5] identifies the following as instruction units which have been validated in other areas of planning and management:

1. Design and Assessment Structures
2. Systems Analysis and System Synthesis
3. Management and Control Sub-systems
4. Network-based Management Sub-systems
5. Planning-Programming-Budgeting Sub-systems
6. Cost-Benefit and Cost-Effectiveness Analysis
7. Environmental Analysis and Need Assessment
8. Technical Procedures in Educational Planning
9. Planned Change in Education
10. Management Information Handling
11. Modeling and Simulation

Miller's list typifies the great variety of tools which are needed by educational planners.

From these various enumerations of some types of expertise and specific tools needed, it can be seen that there exists a common core of technologies for management planning. That is, considerable concurrence exists regarding expertise which would be advisable to establish in a planning unit for a state education agency.

ALTERNATIVE WAYS TO ACQUIRE MINIMUM CAPABILITIES

To establish these types of expertise, a state board of education would have at least three basic alternatives available in regards to staffing such a planning unit.

Alternative I. The state board could hire professional planning consultants, who most likely would have received their training in a business-industry orientation. The expertise of these persons could be adapted to the educational situation.

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[5] Donald R. Miller, **A Statewide Project to Prepare Educational Planners for California,** An Orientation Report Prepared by the Staff of OPERATION PEP (A Work Performed Pursuant to a Grant From the U.S. Office of Education, Burlingame, California: November 7, 1967), p. 5.

Alternative II. The state board could choose to move educators into the planning area with the intent of training these persons in the science of planning and eventually, but not immediately, realizing benefits of technical planning assistance for the agency.

Alternative III. A combination of the two preceding alternatives could be selected. This choice might be utilized with the general strategy of relying upon consultants more heavily in the beginning in order to initiate professional planning activities within the agency while in the interim, education generalists are being trained for planning. Given such a plan, the training and subsequent competencies of the educators could be built to a minimum operational level in a period of one to three years. The ratio of consultants to educators would gradually diminish as the skills of agency educational planners increase. The relative cost and benefits of these three alternatives are explored in the next section of this report.

Rationale for Selecting an Alternative for Utah. Based on a number of studies and a recommendation made by Dwayne Gardner,[6] U.S. Office of Education, that the planning unit staff should be kept very small (a range of 4-15 men, from smallest to largest states respectively), the Utah unit has selected four as a minimum number of educational planners.

Tables 1, 2 and 3 present costs of the three alternatives mentioned previously. The costs are exhibited per planner for purposes of comparison. Also, each table illustrates the cost of a complement of four planners.

Rationale for Alternative III and Supporting Criteria. There is justifiable rationale for the support of Alternative III as that alternative which holds the most advantage, in the long-run, for the Utah State Education Agency.

The criteria or evidences which support this choice are enumerated below:

1. The cost factor, although not a substantial one, is in favor of Alternatives II and III, particularly in the fourth, fifth and subsequent years.
2. It is felt that a desirable catalyst function or nucleus for overall planning would not result from the sporadic employment of consultants on an itinerant basis.
3. Because of the unique nature of education and the diversity from business-industry practices, it is felt that educators trained in planning technologies would adapt and

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[6] Comments made by Dr. Dwayne Gardner, USOE, at a Regional Conference on Consolidation of Federal Funds, Denver, Colorado, April 17, 1968.

serve the education field more readily than would business oriented consultants attempting an adaption to education. This assumes that there are no educational planning consultants, per se, available to Utah.

4. The practical and real difficulty in actually obtaining the exact type of consultant capabilities needed, as outlined in previous sections of this report, may render Alternative I nearly inaccessible.

5. The combination plan of Alternative III, which provides for some consultant aid, would provide the capability to get some planning priorities underway during the first year, as opposed to plan II which lacks such a capability.

6. Alternative III would provide a real training function for the educators being trained as planners; that is, the educator-planners would be able to learn in an apprenticeship fashion from the consultant. This would provide training in addition to the formal training provided by Alternative III.

7. The hiring of a certain ratio of consultants as provided in Alternative III would add prestige and credibility to the fledging Planning Unit and should assist greatly in its acceptance among other educators and the Agency staff.

8. As the consultant outlines or prescribes certain planning technologies, a number of staff members could be brought in for a brief in-service training capsule. Such activities during the primary steps in implementation of some technical planning processes should serve to initiate thinking toward an acceptance of planning technologies among Agency staff.

9. The advantages mentioned in many of the preceding paragraphs would be obtained at negligible additional cost comparing Alternative III with Alternative II.

TABLE I – ESTIMATED COST OF ESTABLISHING AND MAINTAINING MINIMUM PLANNING CAPABILITIES FOR UTAH STATE BOARD OF EDUCATION

ALTERNATIVE I:

Contracting of Professional Consultative Planners – No Educators Utilized for Technical Planning

These amounts are Estimated *Per Planner*
(Total of Four Planners are Recommended as Minimum Planning Unit)

	FY '69	**FY '70***	**FY '71***	**FY '72***	**FY '73***
Salary Cost for Each Full-time Consultant	$16,000	$16,000	$16,000	$16,000	$16,000
No Educators Utilized for Technical Planning	0	0	0	0	0
Cost Per Planner Alternative I	$16,000	$16,000	$16,000	$16,000	$16,000
Salary Cost of a Complement of Four Planners, Alternative I	$64,000	$64,000	$64,000	$64,000	$64,000

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* It would be practical to assume that salary and other costs would increase, in accordance with a rising price index, approximately 5% each subsequent year after FY '69; but costs are held constant in these exhibits to compare more readily the "trade off" variables being herein evaluated.

TABLE 2 – ESTIMATED COST OF ESTABLISHING AND MAINTAINING MINIMUM PLANNING CAPABILITIES FOR UTAH STATE BOARD OF EDUCATION

ALTERNTATIVE II:

GRADUAL ACQUISITION OF TECHNICAL PLANNING SKILLS BY EDUCATORS-NO CONTRACTED CONSULTANT PLANNERS

There Amounts are Estimated *Per Planner*
(Total of Four Planners are Recommended as Minimum Planning Unit)

	FY '69	FY '70*	FY '71*	FY '72*	FY '73*
No Consultants Utilized	0	0	0	0	0
Average Salary of Educator to be Trained in Technical Planning, Per Educator	$13,925	$13,925	$13,925	$13,925	$13,925
Training Fees Per Planner Attending Training .25 of Full Time (25%) During Three Years and .10 FTE (10%) During Subsequent Years	600	600	600	250	250
Transportation to and Subsistence at Training Sites, Per Planner	1,100	1,100	1,100	450	450
Cost Per Planner, Alternative II	15,625	15,625	15,625	14,425	14,525
Cost of a Complement of Four Planners, Alternative II	62,500	62,500	62,500	57,700	57,700

* It would be practical to assume that salary and other costs would increase, in accordance with a rising price index, approximately 5% each subsequent year after FY '69; but costs are held constant in these exhibits to compare more readily the "trade off" variables being herein evaluated.

TABLE 3 – ESTIMATED COST OF ESTABLISHING AND MAINTAINING MINIMUM PLANNING CAPABILITIES FOR UTAH STATE BOARD OF EDUCATION

ALTERNATIVE III:

COMBINATION OF CONTRACTED CONSULTANTS AND TRAINING OF EDUCATORS FOR A PLANNING UNIT

There Amounts are Estimated *Per Planner*
(Total of Four Planners are Recommended as Minimum Planning Unit)

	FY '69	**FY '70***	**FY '71***	**FY '72***	**FY '73***
Cost for Contracted Consultant Planner (Prorated at ⅓rd FTE per planner)	$ 5,333‡	$ 5,333‡	$ 5,333‡	0	0
Average Salary of Educator to be Trained in Technical Planning, Per Educator	13,925	13,925	13,925	13,925	13,925
Training Fees Per Planner Attending Training .25 of Full Time During Three Years and .10 FTE During Subsequent Years	600	600	600	250	250
Transportation to and Subsistence at Training Sites, Per Planner	1,100	1,100	1,100	450	450
Cost *Per Planner*, Alternative III	20,958	20,958	20,958	14,625	14,625
Cost of a Complement of *Four Planners*, Alternative III	62,874	62,874	62,874	59,875	59,875

* It would be practical to assume that salary and other costs would increase, in accordance with a rising price index, approximately 5% each subsequent year after FY '69; but costs are held constant in these exhibits to compare more readily the "trade off" variables being herein evaluated.

‡ Estimated salary of consultant, $16,000; three to obtain per planer cost of 1 to 3 ratio.

BASIC CAPABILITY RECOMMENDED SPECIFICALLY FOR THE STAFF OF THE UTAH PLANNING UNIT

THE BUILDING OF SPECIFIC RECOMMENDED CAPABILITIES

During the Transitory Phase II, and the Model Phase III, the personnel of the Utah Planning Unit will accrue training and resultant competencies as quickly as possible. Admittedly, this "building up" of technical competence will require two to three years, but this objective of achieving competence in planning through training will be given first priority – not to be subordinated by operational assignments, regardless of their alleged pressing nature.

In the "personnel" section of this chapter, certain capabilities were found to be concurrent among and recommended by a number of authorities who have written about educational planning. From these reference sources, the designers of the Utah Model have selected and recommend as priorities the following eight job specialties for a planning component:

1. An educational futurist
2. A systems technologist
3. A network-based management technologist (PERT)
4. An economist skilled in cost-benefit analysis and planning-programming-budgeting
5. A mathematical and simulation model technologist
6. A person skilled in environmental analysis and need assessment
7. A statistician
8. A person skilled in enrollment forecasting and projecting revenue estimates

DIVIDING NECESSARY SPECIALTIES AMONG THREE EDUCATOR-PLANNERS

Considering the current size of the Utah State Education Agency staff, it could realize benefits from the planning product generated by a staff as small as four persons. The financial demands on many fronts obligates the State Board and administration to a primary commitment of four planners during the initial years of the Planning Model. Notwithstanding, the planning potential outlined in the eight areas above should be available to the Utah education system from the beginning. The obvious solution is to prepare each of three planners in the staff of four with specialties in more than one area and to use a pertinent variety of consultants in the primary phases of various planning assignments in which the unit becomes engaged. The contracted consultants to be hired periodically will make up the equivalent of a fourth staff member.

Therefore, a logical categorization of the eight priority capabilities into three job descriptions is necessary for appropriate coverage by the Utah Planning staff. Each of the three educator-planners will obtain training in a rather narrow or specialized area of planning. Together, the three planners will encompass a basic list of skills or span a minimum spectrum of planning capability.

The Futurist. One educator-planner will be classified as a "futurist." This person will become competent in the analysis of social or cultural trends through examination of psychological and social causation. The futurist will assist in the area of needs assessment so that a continuing program of quality assessment of the needs of the citizenry of Utah can become dynamic input to the Utah educational system.

This planner will gain expertise in the area of developing mathematical models and designing and carrying out simulation projects for the purpose of evaluating alternatives for the administrative and policy groups. The futurist will make use of such techniques as contextual mapping and the Rand-developed Delphi method for obtaining group consensus.

The Systems Analyst. A second planner will specialize in the area of systems analysis and will develop expertise in the use of tools such as flow charts, systems analytical model, planning evaluation and review technique (PERT), and so on.

The Information Analyst. A third educator-planner will become a specialist in information analysis. This specialization would include competence in the area of demographic analysis, plus expertise in the use of a data base service or a management information system as input for planning. This planner will also be an expert in the area of cost-benefit analysis and eventually may provide technical assistance in the initiating of a planning-program-budget system (PPBS) for the Office of the Superintendent.

Tools Common to All Three Planners. Certain planning skills would seem to be best employed if all planners in the unit had a basic preparation in their techniques. PERT; anaysis of missions, objectives and tasks; some statistical finesse; and rudiments of computer application and flow charting are examples of necessary common skills.

Contracted Consultants Equivalent to a Fourth Planner. The need for specialized consultant assistance in a wide variety of areas will be fulfilled through the periodic, but interspersed employment of a variety of consultants for relatively brief, condensed periods during the initial years of Phase III.

The contractual consultants, which in aggregate make up the fourth full-time equivalent planner, will be employed with the dual intent of (1) bolstering the educator-planners in projects in which their experience is limited, and (2) providing the planning component with a broad spectrum of expertise in the initiating of planning work in the specific areas mentioned for which each of the three educator-planners will be responsible.

BUDGET FOR THE PLANNING UNIT

Salary Costs of the Planning Component

As was previously indicated, the Utah Planning Model will utilize a combination of educator-planners[1] and professional planning consultants for staffing a planning component during the initial years of the Planning Model, Phase III. The budget shown in Table 4 reflects the estimated cost for a Planning Unit consisting of four professional personnel and two secretaries.

The four professional personnel include one administrator, two planning associates or specialists, and the contracting of a number of consultants in needed areas of expertise, but only to the extent that the aggregate time contracted of various consultants would represent the equivalent of one full-time staff member.

Costs of Obtaining Planning Competencies

As has been emphasized earlier in this report, specialized training for the education specialists is of prime importance in building the necessary competencies of the planning staff. It is mandatory that adequate funds be budgeted for training costs such as tuition and travel. Therefore, $600 for tuition or training fees is budgeted for each of the three educator-planners.

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[1] The term educator-planner is used to describe the probable employment of former education specialists who are or will be obtaining, through training, the competencies of a professional planner. Although the use of educators is the most likely strategy, an alternative, as has been mentioned, would be to employ professional planners, orient them, and adapt their techniques to applications in education.

Much of the needed training is available only through professional management training institutions or universities situated at distant and widely dispersed locations across the country. It can be noted in Table 4 that the travel category includes cross-country trips for four professional personnel. Hopefully, this would provide for the transportation of the administrator and specialists to various necessary training sites during the year, plus the transportation of a number of consultants to Utah from as far away as the East Coast. The budget provides for twenty days, or approximately four work-weeks subsistence per planner — this is mainly for the purpose of attending schools or training sessions located away from Utah.

In-state travel has been set at a minimum as the Planning Unit will interact to a limited degree with districts or regions in the state during the first year. Early priorities will encompass work within the State Agency; however, assistance to districts and/or regions will be accelerated in subsequent years.

PROPORTION OF TIME ALLOCATED TO TRAINING

The educator-planners will spend approximately 25 percent of their time during the initial years in training endeavors. This does not mean that these specialists will spend all of that training time in residence at universities or management institutions. Rather, 25 percent of their time will be released for inservice study of various types, including residence at such institutions as mentioned plus self-study, apprenticeship with the visiting consultants, programmed courses, extension courses, and other learning activities. It is considered that the use of visiting consultants will serve as one of the most valuable training procedures as the educator-planners will work directly with, and serve as an apprentice to these consultants directly on planning missions for the Utah State Board of Education.

ANTICIPATED COSTS OF THE UNIT BEYOND THE INITIAL THREE YEARS

It is anticipated that the Planning Unit will not expand in the near future beyond the staff of four planners unless the overall size of the State Agency staff increases markedly. However, the ratio of three educator-planners to one consultant may be changed after the third year of Phase III, whereupon four educator-planners would comprise the staff.

After the third year of Phase III the concentration of training may be decreased providing that the level of expertise or planning competence has reached a professional level; however, it is anticipated that a significant amount of training will continue indefinitely so as to maintain a level of competency current or equal to advancing planning technologies. It is projected that the concentration of 25 percent of the specialists' training time will be decreased to approximately ten percent after the third year of Phase III.

The budget amounts were arrived at through a combination of projecting actual experiences during the first year of operation and extending costs for such things as salary increments, prorated increases in space for additional personnel, and the local rates for consultants expended to some degree to cover the cost of consultants. It is anticipated that the overall total cost of maintaining such a budget will increase approximately five percent each subsequent year after the initial year of Phase III.

TABLE 4 – BUDGET FOR A COMPLEMENT OF FOUR PLANNERS
UTAH STATE BOARD OF EDUCATION
(PHASE III, THE THEORETICAL MODEL)

	Salaries		Contracted		Training	Land, Buildings and Equipment		* Other	
Budget Item	**Prof.**	**Non-Prof.**	**Sevices**	**Travel**	**Fees**	**Rental**	**Purchase**	**Expenses**	
Administrator	$16,250								
Planning Associate	12,750								
Planning Associate	12,750								
Secretary		$4,500							
Secretary		4,700							
Consultants (1 FTE)			$16,000						
3 Cross-Country Trips ($700) for Four Professionals				$2,800					
20 Days Subsistence ($400) for Four Professionals				1,600					
2 Intra-State Trips ($100) for Three Professionals				300					
Training Fees or Tuition for Three Professionals at $600 each					$1,800				
Space for Six Personnel at $250 per mo.						$3,000			
Equipment Purchases							$2,000		
Other Expenses for Six Personnel at $1,400 each								$8,400	
TOTALS	$41,750	$9,200	$16,000	$4,700	$1,800	$3,000	$2,000	$8,400	$86,850
Categorical percents of Budget	48.1%	10.6%	18.4%	5.4%	2.1%	3.4%	2.3%	9.7%	100.0%

* Includes Employee Benefits

CHAPTER 7

An Information System in Utah

INFORMATION SYSTEM

A definition of an information system applicable to Utah educational planning in its present state of development takes a practical, rather general, working interpretation. The Utah Planning Unit considers an information system to be a centralized, organized facility and procedure for gathering a comprehensive, usable data-base about all items and facets of education and about social, political and demographic facets of the Utah scene. An information system implies that various divisions or sections of the State Education Agency would refrain from collecting independent reports from districts and regions. An important and integral part of an information system is the application of a glossary of uniform definitions and terminology about various types of data. It implies the use of common formulae and procedures for calculating and accumulating such data.

A second and very important aspect of a working definition of an information system concerns the users of the system. The information, when gathered and stored, must be readily retrievable — quickly, inexpensively, and in response to nearly any conceivable type of request. In this respect, the program design and computer capacity of the data bank are among the most highly contingent factors determining the success of the information system.

INFORMATION MANAGEMENT SYSTEM

An amalgamation of procedures for dynamically employing a data base is called an *Information Management System*. An Information Management System serves as a bridge between the data and the users. The program procedures are applied upon the information system — and, in a sense, become the logistical harness for the data base.

TOTAL INFORMATION SYSTEM

A *Total Information System* has reference to an entirely comprehensive system which spans the spectrum of data about all types of information -- particularly facilities, finance, materials and services, pupils, staff, and curriculum.

The *State Educational Records and Reports Series*, developed through the United States Office of Education, establishes a standardized base of information items and definitions for nationwide, uniform accounting for school programs. It prescribes the five general parameters — pupil, staff, facilities, materials and curriculum for an integrated data base.

Few, if any, systems presently operating in state education agencies can be considered total information systems. Utah, like many other states, is genuinely interested in developing a long-range plan aimed at implementing a total information system. Utah's planners and data specialists are, with great interest, following the progress of such projects as the New England Education System, the Midwestern States Educational Information Project, the Oregon Total Information System, the Iowa Educational Information Project, and others for use as a resource of experiences and for possible adaptations to the Utah system. Notwithstanding this attention to what others are doing, Utah is launching its own program for acquiring a total information system.

TYPES OF INFORMATION REQUISITE TO PLANNING

If planning is to be effective, a great deal of data and information is needed upon which to base assessments of current programs and projections of new activities.

Some information needed already exists, but it is available only in fragments and is generally collected a piece at a time. It is scattered throughout the State Agency, is sometimes out of date, and often is not completely reliable. Nevertheless, Utah should not begin educational planning without finding out what information is already available that might be useful. Surveys of educational programs, resources, and needs have been completed in Utah recently enough that useful reference data and inferences could be drawn from them. In addition, the Utah Planning Unit anticipates the implementation of an imposing, perceptive classification of data advanced by Hansen:[1]

1. *Educational system data*: the organization, legal bases, financial support, and interrelationships of all the public and private educational agencies, from preschool through graduate and adult education levels.

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[1] Kenneth H. Hansen, "Planning for Educational Change: A State-wide Approach," (A paper by the Author, 1968), p. 20.

2. *Educational program data*: curricular programs and course offerings available; holding power of various levels of the school system; diversity and dispersion of newer instructional techniques; availability of instructional materials; provisions for disadvantaged and handicapped youth and adults within the educational programs; identifiable gaps and lags in the educational program.
3. *General statistical information*: data which gives present and projected data covering all aspects of state government and the economic, social, and educational systems of the state.
4. *Manpower requirements*: data (present and projected) showing needs for trained manpower (since a primary social function of education is to produce people to do jobs).
5. *Economic indices*: data (present and projected) on the various economic factors that go into planning not only for educational needs, but for the total growth of the state in terms of its resources and aspirations.
6. *Demographic data*: data (present and projected) on rural and urban population concentrations, dispersions, and shifts, broken down by sex, socio-economic status, and other relevant factors.

Comprehensive information on the United States Office of Education parameters, combined with the data categories above, constitute the general types of information necessary for a total information system for Utah, if deployed by an effective information management system.

PROGRESS TOWARD A UTAH EDUCATIONAL INFORMATION SYSTEM

The Utah Educational Data Processing Project represents a concerted effort toward a total information system in Utah. Tentative plans for a large-capacity, shared computer center for Utah school districts and the State Education Agency is being evaluated for practicability by representative of the school systems, the Legislature, data experts, and other interested groups. An in-depth items analysis of data needs is presently being conducted by a large team of system analysts. Data from all quarters of education across the state are being assessed for eventual input to a comprehensive consortium. There it will be readily retrievable and available for coordinated purposes of planning, evaluation, research, dissemination and communication in the education process in Utah.

Seemingly, always tantamount with such projects is the struggle for adequate financing. Utah's Educational Data Processing Project, in traditional fashion, has been and is hampered by a lack of adequate financing.

However, Utah educators fully anticipate eventual installation of a total information system including a vast capacity for computer-based instruction. Noteworthy progress toward the information system objective is the Continuous Progress Education Project funded through Public Law 89-10, of Title III. It was conceived for the purpose of designing a rapid information system for the recording and retrieval of continuous evaluations of pupil progress.

Also, an innovative instructional system conceptualized by the Utah state superintendent, Dr. T. H. Bell, is dependent upon a continuous progress capability and upon master teachers' day by day prescription drawn from among thousands of learning units available through a wide range of instructional media, including programmed learning. Pilot phases of this project will not be computer dependent, but the eventual desired efficiency of this instructional system will necessitate application of a highly automated, total information system.

THE PLANNING UNIT'S INTERACTION WITH THE INFORMATION SYSTEM

The Planning Unit will be among the most consistent users of the information system. The Planning Unit staff will be very active in (1) prescribing certain elements of basic data to be included in the system, (2) designing procedures for relating and integrating informational items, and (3) assisting in the interpretation of appropriate outputs.

A meshing of purpose will be accomplished between the Educational Data Processing systems people and the Planning Unit staff. The futurist and the information analyst of the Planning Unit will serve as a direct link with the aforementioned entity in a near lend-lease or reciprocal arrangement. These specialists will supply expertise in applying Utah demographic analysis and social-political causation factors to the weave of the data base.

CHAPTER 8

A Brief Resume of Questions and Answers Regarding Utah's Planning Unit

Question 1. What is the mission of the Planning Unit?

Answer: The mission of the Planning Unit is to help develop sound, carefully conceived statewide plans for education. It serves the State Education Agency by providing technical planning assistance to the administrative decision-maker and his staff as they implement policy leading to the attainment of the State's educational goals. The Unit functions in a coordinating capacity, helping to define and clarify statewide educational needs and objectives and assisting in the examination of priorities relating to these needs.

It identifies problems pertinent to the planning mission and develops alternative strategies for implementing solutions. The Unit helps to determine performance requirements, constraints, limitations of resources, and "best path" and major milestones to the achievement of objectives or the development of problem solutions. The Planning Unit will help educators cope with change by anticipating it and will evaluate results against plans and then modify its efforts.

Question 2. Whom does the Planning Unit serve?

Answer: The Planning Unit will serve in an assisting and consulting capacity to the Superintendency and other members of the Agency staff. The Planning Unit will also serve as a source of expertise and planning information to local systems of education. The Unit will serve as a liaison among the people of Utah, the State Education Agency, and various other agencies and institutions involved in the planning which affects education.

Question 3. When will the Planning Unit function?

Answer: During the first year that a Planning Unit existed in Utah's State School Office, its major activity was to develop a planning model. Thus, the first year was considered to be a developmental stage in the evolution of educational planning capability within Utah's State Education Agency.

During the second year the Planning Division began providing services in the form of skilled planning assistance to the State Agency, local districts, and to the general citizenry of Utah. The operational stage of long-range comprehensive educational planning for the State began in July, 1968.

Question 4. How will the Planning Unit develop new technical planning skills?

Answer: The Planning Unit will develop skills by:

a. Conducting and participating in inservice training courses offered through universities, computer and software manufacturers, and management institutions.

b. Contracting with consultants trained in highly specialized areas and working directly on Utah planning projects with such consultants.

c. Assessing the military, business, and industry for techniques, systems, and procedures which may be adapted to education.

d. Attending conferences and exchanging ideas with other states, regional laboratories, and with the United States Office of Education.

e. Helping to develop the need or demand for an information system which will make the right information available to those who need it, when they need it, in the desired format all at the least possible cost.

Question 5. How will the Planning Unit operate?

Answer: Generally, the Planning Unit established in the State School Office will fill a staff rather than a line role. It will serve in a coordinating capacity instead of directing operational programs. The Unit should function as a source of information and developer of alternatives, leaving the decision-making regarding use of such data to the State Superintendent and his key staff members. Suggestions will be made by the Unit, but it will not exercise control over programs. It will fill a planning service rather than a program development function. While the Planning Unit will mainly fill a service and supportive type role, on occasion it may function in stimulating and initiating pilot projects and activities.

Question 6. Is planning a function of administration?

Answer: Utah's Planning Unit is not an administrative unit but a service unit; however, the planning function is an administrative tool or function of administration. Within the list of administrative processes, planning lies between policy-formation and administrative decision-making. It serves to bridge the gap between these two important processes. Policy lays down the broad social and educational goals to be achieved by the educational system, while planning provides the alternatives upon which administrative action may be based. Specifically, planning stimulates the definition of objectives to be considered in seeking to achieve policy goals. Planning helps to identify the major problems to be overcome in the attainment of objectives and examines the principal alternatives for resolving these problems within the limitations of present and likely future resources. Planners may be assigned the task of suggesting which of a number of alternative solutions appear to be the best, considering specific resources or time factors. The planning process should specify objectives in terms which can be observed and measured. Finally, planning may even formulate suggested action programs for consideration by the policy or decision-making groups.

Question 7. What type of tasks will be assigned to the Planning Unit?

Answer: The tasks will vary widely, depending upon the planning needs of the State Superintendent and the current problems facing him. Theoretically, there is almost no limit to the extent or range of activities the Unit might become involved in while fulfilling its role as a service unit; however, those tasks assigned to the Planning Unit should be only those projects which require specialized planning skills.

Question 8. How will the Planning Unit handle a specific problem?

Answer: An operational Planning Unit for the State Education Agency will be able to concentrate its efforts on individual problems or problem areas which are assigned to it by the State Superintendency or the Planning Council. The Planning Unit should not become engaged in long-term, operational programs.

The preparation of a plan for a particular problem assigned to the Unit should start with orientation and discussions between the executive branch in question and the Planning Unit, defining the scope and general direction of the work. For example, discussions between a division administrator and the Planning Unit could lead to the specification of the particular points at which the latter is to assist in the work. Thus, the contributions of the Planning Unit would become raw material for the executive branch.

The Unit should be particularly careful *not* to let itself be used as a scapegoat for unpopular policy choices, a situation which could hamper its future service to the operational units.

The role of a planning unit as here indicated would tend to minimize its direct involvement in policy decisions and maximize its building of professional contacts and competence.

Question 9. Will the Planning Unit develop a master plan for education?

Answer: The Planning Unit will provide planning skills to assist in the development of a sound, carefully conceived master plan for improving elementary and secondary education in Utah. Undue delay in the development of a master plan could result in a continued piecemeal approach to educational planning. This might lead to the failure of the various planned elements to mesh properly or even result in one segment being in contradiction to, or working at cross purposes with another.

It appears that the wisest course of action for the Unit may be to provide planning capability simultaneously for: (1) a master plan for public school education in Utah, and (2) specific smaller planning assignments periodically referred to the Unit by the State Superintendent and/or Planning Council. This approach will permit the members of the Unit to test and develop planning techniques, establish information sources and channels of communication, and develop or improve their competencies in selected skills needed by educational planners. This expertise developed in studying smaller scale problems can be immediately applied toward assisting those designing a state-wide master plan.

Planning done by the Unit should encompass both long-range and short-term planning. For example, planning should be developed for specific periods of time such as one year, two years, five years, or twenty years.

Question 10. Will the Planning Unit identify problems in the State Education Agency?

Answer: The Planning Unit itself may help to locate problems or problem areas where planning assistance is needed through a process of system analysis. Thus, those basic needs around which a plan may develop, may be noted by the planners as well as by other major sectors in the State Agency. Whatever their source, identified problems may need the attention of educational planners. The planning procedure will create the mechanism through which ideas for possible problem solutions may be generated.

CHAPTER 9

Results from Utah's Participation in the Project

One important result from Utah's participation in the Title V Project — Comprehensive Planning for State Education Agencies has been the development of the planning model described in this report. This recommended procedure for employing educational planning within Utah's State Education Agency will certainly aid the Agency in implementing planning capabilities and in more effectively performing its leadership responsibilities. Portions of the model have already been implemented. For example, Utah now has an operational Planning Unit and a Planning Council making up the heart of the planning effort in the State Education Agency. The design for managing educational programs described in Chapter III has been implemented.

Utah's participation in the project has served to focus attention on the process of planning. As a consequence, more importance is now given to comprehensive educational planning than ever before. As results from planning are demonstrated and realized, Utah's planning capabilities will continue to grow in importance and use.

In connection with the project, a specialized staff of educational planners has been identified. Perhaps the greatest result from the project has been the exposure of this Planning Unit staff to new ideas and technology. Members of the Unit learned just how little they knew regarding this new field in education and how much more they needed to know. The project provided for some staff development, but much more will be needed in the future.

Through study, attendance at conferences, and exchange of ideas with project headquarters, the United States Office of Education, and other states, Unit personnel became aware of planning activities in other sections of the country. Through these means, not only did the staff find out what is going on elsewhere but obtained ideas regarding what might be desirable for Utah.

In conclusion, what are projected developments for planning in the future? As always, future forecasting is at best an educated guess but Francis L. Chase reflects the feelings of many when he concludes:

> It is possible that the most significant development in education during the next decade will be the emergence and widespread adoption of new concepts and new technologies of planning. Planning for education in that case will become not a matter of producing a master plan or blueprint, but a process of progressive modification of ends and means through continued analysis and exchange of information.[1]

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[1] Francis S. Chase, "The Status of Eduactional Planning in the United States." A paper given at the Phi Delta Kappa Symposium on Educational Planning, November 12-14, 1967.

Appendix A

A FUNCTIONAL MODEL FOR ORGANIZATION TO BE DEVELOPED THROUGH CONSOLIDATION OF FEDERAL FUNDS

When it is permissible, Utah plans to participate in packaging or the consolidation of administrative funds received from the Federal Government. As soon as it is possible, all federal funds earmarked for program administration or supervision will be packaged. Already, the Utah Planning Unit has become deeply involved in considering this important endeavor since such packaging will require careful planning and organization if it is to be successful. Packaging of federal funds should help move the Utah State Education Agency in the direction of a more functional organization.

PROCEDURES

The following procedures have been developed for consolidation of federal funds and are recommended for implementation when packaging is permissible:

1. *Identifying present functions and derivation of agency-functions.* Administrators or supervisors of the federal titles to be consolidated would list the major functions under each one of the affected titles. A compilation of these various program functions should identify duplication and overlap, making it possible to derive tentative agency-wide functions such as planning, evaluating, administering, training, researching, supervising, disseminating, accrediting, certifying, providing technical assistance, and program development.

2. *Assigning agency-wide functions to operational divisions.* Following the derivation of tentative agency-wide functions, major responsibility for each would be assigned to present operational divisions. For example, the evaluation function could be assigned to the Division of Research and Innovation.

3. *Organizing task forces.* When appropriate, task forces would be organized to assist in major program functions. Generally, a staff member from the division having major responsibil-

ity for a function should head the task force. Other divisions having staff members with expertise in that function should be appointed to the task force as needed.

4. *Reviewing agency-wide functions.* The federal program managers and division administrators should receive the tentative list of functions developed from an analysis of their earlier listings. From their recommendations for further refinement, a final categorization of functions of the agency could be developed. This does not mean that each program or that each division would necessarily have tasks under each function, but the categorization would include all of those functions undertaken by any program or division within the Agency.

5. *Identifying and assigning task.* Each federal program manager should next be asked to identify the specific tasks that his program will require. Then these tasks will be grouped under the agency-wide functions. This effort is necessary to assist the agency in determining the best usage of its resources in achieving total agency objectives.

6. *Estimating task man-days.* After the tasks have been identified, each program manager should be asked to make an estimate of the man-days necessary for the completion of each of the program tasks. It is recognized there will be some overlap and that tasks will not be readily packaged into separate boxes. Nevertheless, the major tasks to be completed should be subjected to such scrutiny and analysis. By this effort, it is anticipated that the Agency can estimate the manpower needs by function for the federal programs suggested for packaging.

7. *Scheduling tasks.* Following the identification of tasks and the man-days needed by function to complete these tasks, the program manager should be asked to develop a schedule noting starting and completion dates for the individual tasks. This schedule would probably be portrayed on a fiscal-year calendar. From the estimate of man-days necessary to complete the task and the time allotted for its completion, the assignment of manpower could be better determined.

8. *Analyzing Manpower by function.* The divisions to which the function responsibility has been assigned would compile the requests of all the program directors for that function. A graphic representation of the manpower needs on a weekly schedule would undoubtedly reveal the low, medium, and peak man-day requirements for each function. From this analysis, the request for task force personnel, drawn from across the divisions, could be deter-

mined. Adjustments in the scheduling of tasks could be accomplished to distribute manpower needs more evenly. Peak demands and skills in short supply could be provided through contractual services.

9. *Analyzing Agency-wide manpower capabilities.* To make it possible to determine the availability of manpower for functional task performance, an analysis would have to be made of the agency-wide staff competencies. This would be done in a rather simplified manner by an analysis of the training and experience of each staff member on a coded master list of educational skills.

10. *Scheduling of personnel on ad hoc task forces.* From the data available from the program managers and the personnel skills available within the Agency, ad hoc task forces would be assigned to complete the functional tasks as scheduled by the federal program managers. This listing would include personnel, tasks to be completed, the time of beginning of the task, and estimated time of completion of the task.

11. *Estimating of program tasks.* The allocation of other resources for the completion of this task could also be made by the program manager. This includes such items as travel, consultant services, materials, supplies, and so on.

APPENDIX B

THREE BASIC COMPONENTS OF A FUNCTIONAL MODEL FOR ORGANIZATION

Realignment and reorganization of the Utah State Education Agency along functional lines might streamline its operation and strengthen its planning capabilities. This improvement might result from the stimulation provided by packaging of federal funds as discussed in Appendix A or it might result from some more deliberate and direct action. One fruitful kind of arrangement which might be considered was suggested by the State of Texas. It would reorganize the total organizational structure within the agency into three strong components such as described below and illustrated in Figure 5.

1. An appraisal-evaluation-diagnosis component.
2. A strategy building and program development component.
3. A program management and administration component.

If this were the way the office was organized, it would be advisable to regroup present staff and assign them in a line responsibility within one of the three major components.

Those responsible for the first component would have the obligation of identifying programs and needs and would develop extensive manpower and capaibility for purposes of measuring and assessing present educational programs and identifying needs which are not being met.

Members of the second component, using this assessment and diagnostic information, would invent and/or adopt new programs, based upon resources available from all sources, that would contribute to meeting these needs.

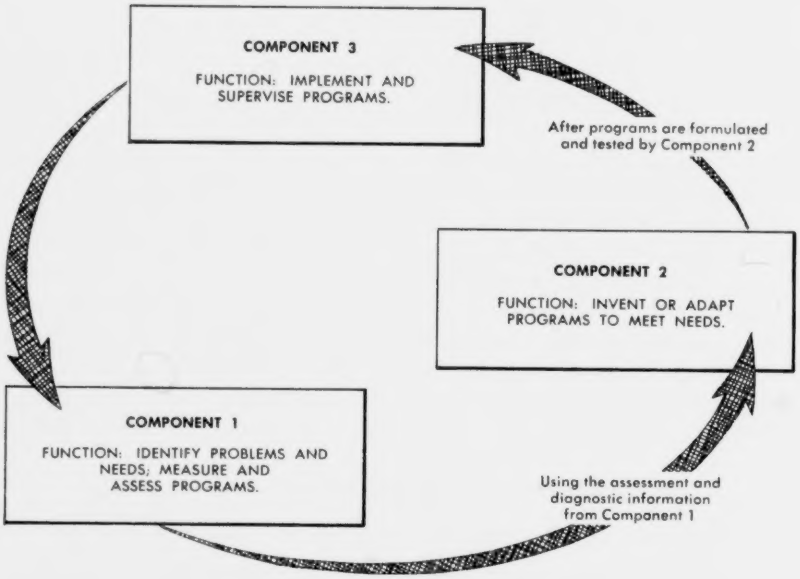
Once new strategies have been formulated and tested, members of the program management component would then have responsibility for implementing and supervising them.

At this point, the evaulation component would again enter the picture to evaluate the ongoing programs and assess the needs.

This functional model for organization consisting of three components is illustrated in the following figure.

FIGURE 5

THREE BASIC COMPONENTS OF A FUNCTIONAL MODEL FOR ORGANIZATION


COMPONENT 3
FUNCTION: IMPLEMENT AND SUPERVISE PROGRAMS.
After programs are formulated and tested by Component 2
COMPONENT 2
FUNCTION: INVENT OR ADAPT PROGRAMS TO MEET NEEDS.
COMPONENT 1
FUNCTION: IDENTIFY PROBLEMS AND NEEDS; MEASURE AND ASSESS PROGRAMS.
Using the assessment and diagnostic information from Component 1

Comprehensive Planning in State Education Agencies

PART VIII

COMPREHENSIVE EDUCATIONAL PLANNING IN WEST VIRGINIA

Written by

B. G. PAULEY
Project Director

West Virginia Board of Education
Charleston, West Virginia
1968

WEST VIRGINIA BOARD OF EDUCATION
CAPITOL BUILDING
Charleston, West Virginia 25305

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CHAPTER 1

Introduction

B. G. PAULEY*

Educational planning is at the same time old and new in West Virginia. It is old in the sense that the State Department of Education, the operating county school districts, and other educational agencies have, in the past, developed both long-range and immediate plans. It is new in the sense that the planning function is being formalized at the state level and that planning procedures and techniques developed in fields outside education are being adapted and used.

Obviously an agency which is charged with the regulation of fifty-five county school systems (LEA's) which enroll over 400,000 pupils and employ some 17,000 teachers must have continuously been in the process of developing plans. The Department has undertaken the planning process through its bureau structure. Coordination of plans has been achieved through staff discussion and the Office of the State Superintendent of Schools. The Department of Education for many years has devoted staff time to planning, and has included teachers, principals, superintendents and lay leaders in its planning process. However, until funds were made available to the Department through Title V of the Elementary and Secondary Education Act, the Department had no one assigned to planning on a full-time basis.

While the Department of Education has recognized a responsibility for planning as a part of its leadership responsibility, it has considered planning to be a responsibility of each staff member, and that plans developed by the Department would result from cooperative efforts of all staff members concerned. This is not to say that this process is bad or that it has resulted in poor plans. The involvement process has worked and has been productive. However, as the educational enterprise becomes more

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complex and decisions have to be made which have many interrelated variables, there is a growing need for specialists in planning, and for a more systematic and thorough planning process.

A fact of life in West Virginia is the need for priorities to allocate scarce funds. There is seldom money enough for a school system or the Department of Education to do all the things that are needed. While this situation emphasizes the need for planning, it has in the past mitigated the demand for planners. When a number of operating programs are pressing for funds, it is not likely that funds will be allocated to planning. Until recently, this has described the plight of both the operating school districts and the SEA.

Institutionalizing Planning. Planning as such is not new; probably no agency, past or present, could be located that has not planned. Planning is a "good" thing, and many attest to its virtue. Despite all the testimonials to the value of planning, there are some indications that at times people and agencies give "lip service" to planning and prefer instead to "fly by the seat of their pants."

To the degree that the foregoing statement is true, it is probably equally true of education in West Virginia. In this State most school districts have building plans in some stage of development. A few of the larger counties continue to undertake aspects of comprehensive planning but most counties are not likely to have any long-range curriculum plans, projections of population trends, forecasts of personnel requirements, or their in-service training needs. Some school systems plan little or nothing beyond the budget for the next fiscal year.

PARTICIPATION IN MULTI-STATE PLANNING PROJECT

West Virginia was invited to join in the "Multi-State Comprehensive Planning Project" at its inception in March, 1967. The Superintendent of Schools, recognizing the importance of educational planning and the need for a more formal planning structure in the State, recommended to the State Board of Education and the Board approved, first the establishment of an Office of Educational Planning, and subsequently the inclusion of West Virginia in the Multi-State Comprehensive Planning Project.

The goal of the planning project was the development by each of the participating states of a model for comprehensive educational planning within the state educational agency. It was expected by the project designers that the planning models developed by each of the six participating states and the Commonwealth of Puerto Rico would differ, but that each model would have features that could be adaptable to other states. The author feels that such differences have emerged.

THE NATURE OF COMPREHENSIVE PLANNING

The prime objective of the Multi-State Planning Project was the development of a model for comprehensive educational planning. This statement poses a problem of definition. Comprehensive is a word that means different things to different educators, and differs also in meaning according to the noun to which it applies; it is used to describe schools and funding plans and services, as well as educational planning. In the West Virginia Department of Education, the phrase "comprehensive educational planning" has been accepted to include the total scope of planning for programs, services, facilities and materials for public schools, adult education, and for the teacher education programs of the colleges and universities. Higher education, other than the preparation of teachers is excluded. Even though the scope of educational planning by the state educational agency does not include higher education, the SEA has established structures to permit coordination between the agencies. This will enable planning for public education to be correlated with the planning being done by the Higher Education Commission and by the higher education institutions.

In the context adopted by West Virginia, comprehensive planning includes planning for all educational programs, facilities and services. It must also include the total administrative and organizational structure as well as programs of financial support. It must include also implementation, evaluation and the feed-back of information gained into a recycling process. In short, comprehensive educational planning must be continuous and must deal with all facets of the educational program and services for the total population served.

INTERRELATIONSHIP WITH OTHER PLANNING MISSIONS

Comprehensive educational planning must also be correlated externally to the education related planning being undertaken by other agencies. Educational plans developed by the SEA must be related to plans produced for health services, roads, economic development and the plans of many other agencies of state government.

State planning to be comprehensive must be related to many aspects of federal planning and to the planning of local school districts and intermediate units. State educational planners, must, insofar as possible, incorporate the federal categorical aid programs into a comprehensive plan. State plans also must include provision for planning by local and intermediate units.

In many instances, plans of the West Virginia Department of Education must be related to state plans developed by other states in the region and even to some out-of-state school districts. Educational television for example does not respect state lines and requires cooperative arrangements among states. Similarly, the opportunity for sharing area vocational schools, computer centers, and in the development of new curricular movements, may require cooperative arrangements among states.

Since the passage of the Elementary and Secondary Education Act the West Virginia Department of Education has participated in several multi-state projects including the Multi-State Comprehensive Planning Project. It is likely that such projects will continue. Such multi-state projects should be integrated into the SEA's comprehensive plans, rather than being developed on an ad hoc basis.

USE OF SYSTEMS TECHNOLOGY

Comprehensive planning must be systematic. It must utilize the techniques which are usually described as a ***systems approach*** or ***operations analysis***. School systems are subsystems of a larger social system. In turn, they are composed of smaller subsystems such as instructional units, transportation systems, and maintenance programs. Systematic planning for a school system or even one of its subsystems requires that the system be analyzed, that components and interrelations be discovered, and that a program be synthesized in such a way that the effect of each component can be weighed and the results estimated.

While systems analysis appears to have value for education, it is a fairly complex process. Comprehensive planning, however, can use many techniques from systems technology, and can adapt them to education. The planning process adapted from the systems approach includes the following steps:

1. Analysis of the system
2. Establishment of measurable objectives
3. Assessment of the status of the system with regard to the objectives sought
4. Development of alternative plans to reach the objectives
5. Assignment of cost estimates to the alternatives
6. Selection of a plan
7. Implementation of the plan
8. Evaluation of the results obtained from the adopted program
9. Recycling the planning through the use of results from evaluations

COORDINATION OF PLANNING WITHIN THE SEA

Comprehensive educational planning requires coordination of the planning efforts of the various bureaus or divisions within the state educational agency. Most SEA's are organized in accordance with a line-and-staff pattern, with agencies being divided into bureaus, divisions, branches, and offices. Usually, each division develops plans for the performance of its own individual function. Within the SEA, bureaus and divisions have undertaken extensive planning in the past and must continue to do so. However, the plans developed by bureaus and divisions must be compatible with the state's comprehensive educational plan. The foregoing statement appears to be such a truism that any mention of it is trite. However, employees develop loyalties to agencies and to a division within an agency. Thus, there are instances of plans being developed by one bureau or division independently of the other divisions of the agency which may duplicate or even be in contradiction to other agency plans. Therefore, for planning to be comprehensive, provision must be made for coordination of planning in an agency. Such coordination appears to be most likely to happen when the coordination of comprehensive planning has been formally assigned to a specific planning unit within an agency. This does not mean that such a unit would undertake all planning for the agency. On the contrary, it would encourage better planning by sub units of the agency, directed toward common goals.

Comprehensive planning must be program-oriented. In too many instances in the past planning has been problem oriented.

Comprehensive planning includes planning programs for the future as well as planning solutions for "brush fires." In fact, although all brush fires may not be prevented, comprehensive planning should reduce their number.

Comprehensive planning includes planning the future as well as planning for the future. Goals are set; the present status is assessed; the strategies are developed to move a program "from where it is" to "where the agency wants to go."

CHAPTER 2

Rationale for Comprehensive Planning

The West Virginia Department of Education was established by an act of the legislature for the purpose of administering the school laws of the State. The Department is a public agency and as such has certain responsibilities which have implications for planning concurrent with its responsibility for administration. The SEA for West Virginia, is charged with leadership, supervision and regulation of the public schools and for programs of teacher education at all colleges and universities which have such programs. Thus, the Department of Education has a responsibility to develop long-range, as well as immediate and intermediate plans.

When one considers the different agencies and groups with responsibility for education, little space is needed to justify the need for comprehensive educational planning. The fact the public schools are operated by fifty-five county boards of eduaction, each with varying resources and aspirations points to the need for the development of comprehensive statewide educational plans. A further complication arises in the State because higher education is controlled by two different boards. In addition, law and precedent have placed many educational functions in state agencies other than the Department of Education. The fact that education is influenced by many pressure groups both from the standpoint of objectives and means is commonly agreed. Finally, the advent of federal assistance to public education through the various categorical aid programs, for which the SEA is primarily responsible, requires plans and proposals.

Planning is required to coordinate the various resources available to the State into an effective and sequential educational program. Associations such as those of school superintendents, principals, and school boards, are to an extent private and special-interest groups. The Department recognizes the right of such groups to formulate plans and to lobby for the adoption of programs in which they are interested. The Department of Education has cooperated and continues to cooperates with the West Virginia Education Association, the Association of College and

University Presidents and other professional associations in the State. Nevertheless, the Department is the sole public agency having a function of planning for public education. Consequently, the Department has a dual planning responsibility as follows:

1. To engage as great a portion of the general public as possible in the educational planning process
2. To subject all plans to the criterion of their effect on the public.

Acceptance by the Department of responsibility for widespread planning involvement has been translated into planning with and through committees and ad hoc groups appointed for special planning tasks. Members of the SEA also serve on committees appointed by the various educational associations. This policy will continue as the Department institutionalizes planning through the establishment of a comprehensive educational planning unit. As the planning capability of the agency develops, the Department will be in a better position to coordinate its educational planning, to provide for continuity of planning and to evaluate the outcomes of plans that are implemented.

Housing and Urban Development: Sixteen counties in the State have received planning grants from the Department of Housing and Urban Development. In conjunction with these grants, these counties must develop long-range educational plans as part of the county plans. It is expected that county boards of education will be asked more and more to relate educational plans to county-wide planning. The location of new school facilities must be related to population projections. Efficient allocation of land for residential, industrial, commercial, and recreational use imposes the need for educational plans to be a part of a comprehensive plan extending beyond county lines. The location of schools also affects residential patterns. In fact, education is affected by, and in turn affects, most facets of community life. Thus, educational planning must be a part of comprehensive planning at the state, regional, and local levels. Recognizing this, HUD comprehensive planning is now moving to include regions larger than one county.

School Planning Requirements: All county school systems participate in ESEA Title I programs which require the submission of plans. Plans and project applications are required also for other Federal aid programs. Counties have combined to develop plans for PACE Centers. The newly amended ESEA, Title III legislation requires that Title III projects be within the framework of the overall plan for educational development in the State. County systems are asked also to submit plans to qualify for state assistance under the Comprehensive Educational Program, a state incentive program.

Regional Planning Needs: Regional educational planning is more and more a necessity in the State. The guidelines for many federal programs presently require regional planning. Factors such as educational television, new transportation patterns resulting from the interstate highway system, and the cost of specialized facilities such as those for vocational-technical schools require coordination of plans being developed by the separate counties.

State Planning Office: The Department of Commerce, by executive order of the Governor, is responsible for the coordination of all state agency planning. The Department is encouraging and assisting with the development of comprehensive plans for economic regions in the State, which will include plans for schools and educational services. Both the Department of Commerce and the Department of Education have divided the State into regions. While the Department of Commerce's regions are designated on an economic basis, they are similar to the regions established for education. A great deal of sharing of economic, demographic, and other data that are common to both agency's needs is now possible.

Cost of Education: At the same time that the importance of education has been gaining greater acceptance, the costs of education have risen phenominally. The pressure of teacher groups for adequate salaries, the increasing use of technology in teaching, in student accounting and in business applications, plus the greater use of para-professionals, have all contributed to the rising costs of education. All of these trends are likely to continue. The net result is that at a time when more and more people are demanding a higher quality and more extensive education, the price of the basic program is rising sharply. It is likely that the usual basis for support of local effort – the property tax – will soon be unable to support education in many places in the State. As a result of the financial squeeze, many long-established assumptions about education will have to be reexamined. More expertise in planning will be required to provide the desired kinds of education at the least cost.

In the past, much of the educational planning done by the SEA has resulted from problems which have arisen. Consequently, plans many times have been designed to solve problems or to prevent their recurrence. Planning, however, should be more than responses to given situations. Planning shapes the future and predicts it, as well as providing for contingencies. As the Department begins to formalize its educational planning procedures, it will establish a planning unit which will be program oriented rather than problem oriented, which will plan for the future of education in the State, and which will be capable of developing immediate, intermedaite, and long-range comprehensive plans.

CHAPTER 3

Recent Improvements in Planning Capability

EDUCATIONAL REGIONS

Because of the geography and topography of the state, the Department of Education has experienced difficulty in providing services from the state capitol to all parts of the state. In 1959, the SEA established seven educational regions. In 1962 a department-college coordinator was placed in each region. The coordinators' duties are to facilitate the SEA's regulatory and service functions, promote cooperative planning and to maintain liaison between the state colleges and the Department. In 1966-67, an ESEA Title I regional specialist was added to each region.

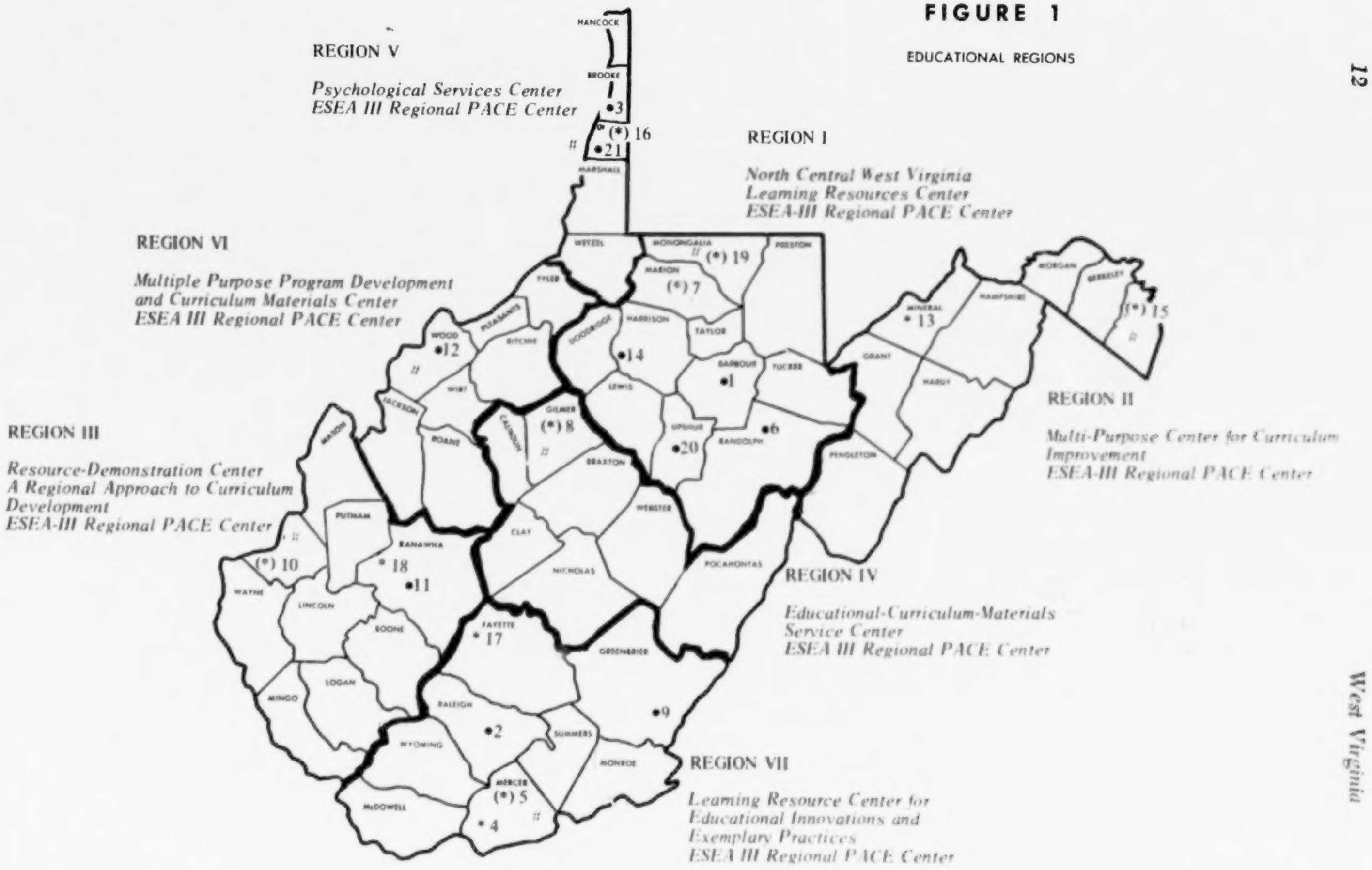
All the educational regions follow county lines. Thus, each region contains a specific number of county operating school districts. Each region was established also to contain one or more state college. (The West Virginia Board of Education governs the state colleges as well as regulates the operation of the public schools.) The regional coordinator and curriculum specialist in each region operate from an office supplied by a college and the coordinator is assigned also to the college staff.

The regional structure of the state provides a natural basis for planning multi-district programs and for regional research and development centers. With the advent of ESEA Title III, each of the regions applied for and has been granted a PACE Center. With one exception, these centers serve all the counties in the region. The centers are operated by boards of directors representing the boards of education of the county districts. While there are differences among the PACE Centers, generally they provide services to the counties and are staffed with the appropriate needed specialists. Figure I shows the seven regions into which the state has been divided, the state colleges, and the PACE Centers.

Regional planning, through this structure, has been done primarily by the school superintendents and their staffs, although

FIGURE 1

EDUCATIONAL REGIONS



in some regions there are also active groups of principals, supervisors, and board of education members. The strength of these organizations varies among the different regions, as would be expected. The Department is now moving to strengthen the regional groups and to place an increased emphasis on the development of regional plans that will provide for cooperation among the county operating districts.

COMPREHENSIVE EDUCATIONAL PROGRAM (CEP)

The "Comprehensive Educational Program" (CEP) for West Virginia was published in September 1964. The purpose of CEP was to provide a complete and versatile curriculum designed to meet the needs of all children, youth, and adults. The CEP resulted from interdepartmental planning over a three-year period. Personnel from the county school systems and consultants participated in its development. At the time of this report, the CEP continues to be the principal vehicle and the overall curriculum design for educational improvement in the state.

The CEP describes programs in eighteen curricular areas and four service areas. The CEP is based on three general criteria as follows:

1. There is a comprehensive general prorgam of education to meet the needs of all students at all levels.
2. There is a comprehensive elective curriculum for those who will need salable skills immediately upon graduation from high school.
3. There is a comprehensive elective curriculum for those who will continue in a program of formal education.

The CEP attempts to unify all the improvement efforts of the various bureaus and divisions into and around a theme of comprehensiveness. Such diverse programs as music, art, and vocational and special education have been related and made part of the Comprehensive Educational Program. Federal funds which provide categorical aid have been allocated, insofar as possible, to appropriate facets of the Comprehensive Educational Program. Limited funds to support the CEP have been appropriated also by the West Virginia Legislature.

Criteria for evaluating programs for comprehensiveness have been published by the Department and funds are allocated to counties on the basis of the qualification of their programs for comprehensiveness. Thus, counties that are able to qualify programs on the basis of the published criteria receive additional state funds.

OFFICE OF EDUCATIONAL PLANNING

Approximately one year prior to the inception of the Multi-State Comprehensive Planning Project, the West Virginia Department of Education had made a commitment to planning through the establishment of an Office of Educational Planning and the naming of a Director of Planning. Previous to the establishment of the Planning Office, the SEA had engaged in planning through its various bureaus and divisions, with coordination of plans being accomplished through the State Superintendent of Schools. The objectives of the planning office were stated by the State Superintendent of Schools in his 1966 Annual Report to be as follows:

1. The identification and assessment of responsibilty for providing a statewide system of promoting and evaluating educational outcomes and individual achievements
2. A concentrated effort to improve education through innovation and experimentation
3. The development of activities commensurate with the responsibility of the State Department of Education and the development of educational leaders
4. The development of clear and distinct major and related responsibilities of each bureau to the overall educational plan.

The State Superintendent emphasized in his report the importance of long-range planning and said, "The State Department of Education . . . shall be aggressive in identifying the educational needs of the state . . . through its educational leadership." The State Superintendent's report also outlined steps to be used by the Department in achieving the above objectives as follows:

1. Identification and description of the nature and scope of current practice
2. Assessment of present and future, local and state-wide needs
3. Development of specific plans for the school year 1966-67
4. Development of general plans for the next five years

5. Analysis of current involvement of staff members
6. Identification of the major responsibility of each bureau and its related responsibilities to the other bureaus.

The establishment of the Office of Educational Planning provided a structure both for the coordination of bureau plans and for comprehensive educational planning. The approved budget for the 196-67 fiscal year provided a total of $39,450 for educational planning from funds made available through Title V of the Elementary and Secondary Act. These funds were allocated for a director, an assistant director, two clerical employees, office supplies and equipment, and the necessary overhead expenses. However, because of limited available funds and scarcity of qualified personnel, the staff of the Office of Planning was limited to a director and a secretary.

DESIGN FOR A STATE-WIDE PLAN

Shortly before West Virginia was invited to participate in the Multi-State Comprehensive Planning Project the Department of Education began the preparation of "A Design for the Development of a State-Wide Plan for Education for West Virginia" which was a restudy and extension of the Comprehensive Eduactional Program.

Objectives were stated for this state-wide planning effort as follows:

1. The development of a master plan for education appropriate to the ages, needs, and ability levels of all West-Virginians
2. The involvement of professional educators, governmental leaders, and lay citizens in the development of the master plan
3. The utilization of pertinent findings from previous studies of education in the State

Three major thrusts were established for the study as follows:

1. Identification of areas for concentrated planning
2. Maintenance of liaison with other state agencies whose responsibilities affect education

3. Provision of leadership and assistance to county operating units regarding the development of local and regional plans.

With the inclusion of West Virginia in the Multi-State Comprehensive Planning Project, the effort to develop a master plan was combined with and became a part of West Virginia's Comprehensive Educational Planning Project. Similarly, the establishment of a structure for the development of the master plan was combined with the task of developing a planning unit capable of long-range, comprehensive planning. It is likely, as a result of experience gained in the Multi-State Project, that efforts to develop a master plan will be delayed and an emphasis will be placed instead on continuity and comprehensiveness of planning. The development of a master plan will await the development of more sophistication in the SEA's planning capability and possible reorganization to provide better coordination among all levels of education. Meanwhile, the planning unit will plan for selected facets of the State's educational effort.

LAY AND PROFESSIONAL INVOLVEMENT

Acceptance by the Department of responsibility for widespread planning involvement has been translated into a practice of planning with and through committees and ad hoc groups appointed for special planning tasks. Department of Education members serve also on committees appointed by the various educational associations. This policy will continue as the Department institutionalizes planning through the establishment of a comprehensive educational planning unit. The Department will now be in a better position to coordinate its educational planning, to provide for continuity of planning, and to evaluate the outcomes of plans that are implemented.

DATA PROCESSING

In 1961 a data processing unit was established in the Statistical Division of the Bureau of Administration. Unit record equipment was installed. In 1966 a computer and supporting equipment were leased. At that time additional personnel were added. The expansion was planned to provide a broad educational data base to meet the growing need for objective data in the field of education. With the additional equipment and personnel, the data processing unit will have the capability to meet the SEA's anticipated educational data processing needs for at least a five-year period.

The SEA, with the assistance of outside consultants, has develped plans for a data base organized as recommended by the Committee on Educational Data Systems of the Chief State School Officers, covering five areas: (1) staff, (2) curriculum, (3) finance, (4) pupil personnel, and (5) plant. This plan was implemented in January 1966 and covers a five-year period. The data base for staff has been completed; curriculum is nearing completion and all the remaining areas are in process of development. When the planned program is completed, the SEA will have a data bank encompassing basic information in the stated areas, which will be compatible with data bases being established in other states. These five categories represent the basic data necessary to the educational planning process. (See also "Information Systems," Appendix A.)

As a result of recommendations from an earlier study by a task force on electronic data processing (EDP), the Governor's Office contracted in 1966 with a consultant firm for a study of EDP needs, procedures, and equipment allocation. The study was completed in 1967 and recommended the establishment of an integrated EDP network, with three centers to serve the needs of all state agencies and a fourth center to serve the needs of the state colleges and universities. Scheduling, priorities, and computer time allocations are to be made by a committee of network users. Later the four centers are to be consolidated. The plan is based on the established fact that the cost of EDP is such that each state agency will not be able to have its own computer and that agencies will have to share EDP services. If this plan is implemented, the SEA will lose its EDP equipment and will receive EDP services from a computer center located in another state agency.

CHAPTER 4

West Virginia's Comprehensive Planning Model

THE MULTI-STATE PROJECT

West Virginia was invited to join in the "Multi-State Comprehensive Planning Project" at its inception in March, 1967. The Superintendent of Schools, recognizing the importance of educational planning and the need for a more formal planning structure in the state, recommended to the West Virginia Board of Education and the Board approved participation of West Virginia in the Multi-State Comprehensive Planning Project.

While the overall goal of the Multi-State Project is that of developing a model for a comprehensive planning unit, it was decided early in the project that the SEA would place increased emphasis on planning at the same time and develop or reexamine long-range plans for educational improvement in the state. Thus, the development of a planning process in the SEA and the development of specific operational plans have been undertaken simultaneously during participation in the Multi-State Project.

The first planning effort by the SEA subsequent to the State's participation in the multi-state project consisted of an evaluation of its own organization and functions. Actually, this self-study had begun some time before West Virginia joined the project with the establishment of the Office of Educational Planning. However, the State's participation in the Multi-State Planning Project gave emphasis to this self-examination. The departmental self-study involved the following facets somewhat sequentially:

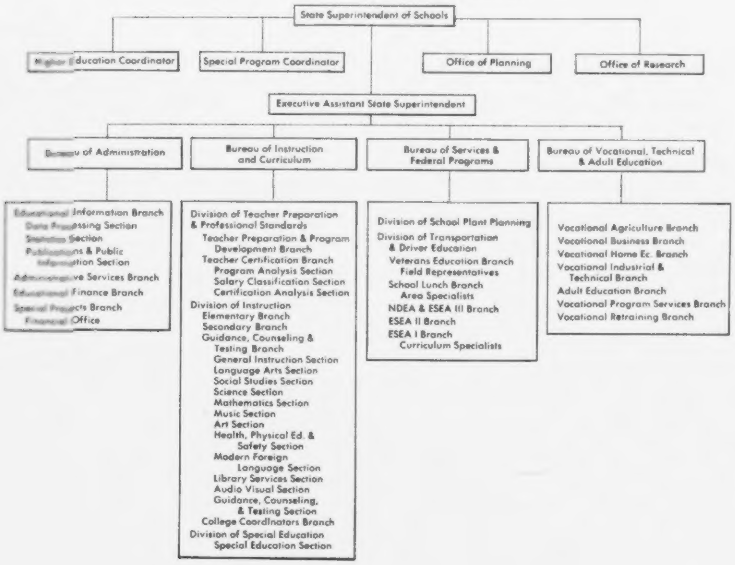
1. An examination of previous reports and studies dealing directly or indirectly with the work of the Department of Education
2. A role description by each professional member of the Department staff
3. A determination of the role of the Department of Education as viewed by the staffs of twenty-two of the fifty-five county school systems, and an assessment by county staff members of the degree to which the state agency was fulfilling its expected role

4. A study of the role and function of the agency, as defined by staff members and by practitioners and a study of existing divergencies from the role and functions identified
5. An evaluation of the SEA by a team from the United States Office of Education
6. A staff study of the report of the USOE evaluation team
7. A proposal for recommended changes, according to the following three categories:
    a. Changes that can be made by the agency itself
    b. Changes requiring action by the West Virginia Board of Education
    c. Changes requiring legislation.

The responsibilities of the SEA, as seen by both department and county staff members include regulatory, service, and leadership functions. The state agency is organized into bureaus, divisions, branches, and sections as shown in Figure 2.

FIGURE 2

WEST VIRGINIA DEPARTMENT OF EDUCATION


State Superintendent of Schools
Higher Education Coordinator
Special Program Coordinator
Office of Planning
Office of Research
Executive Assistant State Superintendent
Bureau of Administration
Bureau of Instruction and Curriculum
Bureau of Services & Federal Programs
Bureau of Vocational, Technical & Adult Education
Educational Information Branch
Data Processing Section
Statistics Section
Publications & Public Information Section
Administrative Services Branch
Educational Finance Branch
Special Projects Branch
Financial Office
Division of Teacher Preparation & Professional Standards
Teacher Preparation & Program Development Branch
Teacher Certification Branch
Program Analysis Section
Salary Classification Section
Certification Analysis Section
Division of Instruction
Elementary Branch
Secondary Branch
Guidance, Counseling & Testing Branch
General Instruction Section
Language Arts Section
Social Studies Section
Science Section
Mathematics Section
Music Section
Art Section
Health, Physical Ed. & Safety Section
Modern Foreign Language Section
Library Services Section
Audio Visual Section
Guidance, Counseling, & Testing Section
College Coordinators Branch
Division of Special Education
Special Education Section
Division of School Plant Planning
Division of Transportation & Driver Education
Veterans Education Branch
Field Representatives
School Lunch Branch
Area Specialists
NDEA & ESEA III Branch
ESEA II Branch
ESEA I Branch
Curriculum Specialists
Vocational Agriculture Branch
Vocational Business Branch
Vocational Home Ec. Branch
Vocational Industrial & Technical Branch
Adult Education Branch
Vocational Program Services Branch
Vocational Retraining Branch

STEPS IN ESTABLISHING A PLANNING UNIT

Establishing the Need

The institutionalization of planning in the West Virginia Department of Education resulted from a need felt by the Department and the provision of funds through Title V, ESEA. The establishment in the SEA of a comprehensive educational planning unit, if it is to function effectively, requires a recognition of need not only by the chief state school officer but by personnel throughout the agency. The notion that planning is everyone's responsibility is likely to be contrary to the idea of full-time planning personnel, unless there has been wide involvement of agency personnel in the decision to establish a planning unit.

The decision to establish a comprehenisve planning unit in the SEA should be based on an assessment of the planning needs of the state agency. The assessment in turn should be made in terms of the objectives sought for the unit. However, these two preconditions to the establishment of a planning unit can be somewhat like the question of "the chicken and the egg." It is probable that both goals and assessment will be somewhat informal and that realization of the need for planning personnel will have grown over an extended period. If this is the case, one of the first assignments given to the planning unit should be that of preparing recommendations regarding the objectives, structure, and procedures for the unit itself.

Defining Objectives and Responsibilities

Once the decision to establish a planning unit has been made, or perhaps even before, objectives for the unit should be established. These objectives will determine the direction of the unit and will guide the preparation of job descriptions for personnel. In West Virginia, the objectives were to establish formal planning as a function of the SEA, to develop and refine a comprehensive educational planning process, to provide planning services, and to stimulate educational planning at the local and regional levels. The objectives for the planning unit must, as other statements of goals and objectives, be subject to revision. For example, in West Virginia the objective of "developing a comprehensive educational plan for the state" has already been modified. As a result of our experience to date, the idea that this objective meant the development of a master plan for education has changed and the objective is now interpreted to mean the development of coordinated plans for various components of the educational program. The development of a master plan for education is now considered too ambitious a project for the present, and perhaps not a desirable planning objective.

Early in the process of establishing a comprehensive planning unit, the SEA will have to decide the responsibilities of the unit for implementation of approved programs. This is a sensitive area since it can involve planners in activities that other agency personnel may consider their domain. The position that planners do not implement may deny to the SEA the use of personnel who are likely to be most knowledgable about projects. The position that planners implement approved programs, even if limited to a pre-determined point, requires planning personnel to become program administrators.

Also to be determined are procedures for evaluation, the use of evaluative data to recycle the planning process and the responsibilities of the comprehensive planning unit for evaluation. Concerning the need for evaluation, there can be no doubt. Concerning evaluative procedures, however, there are many approaches, some of which are conflicting. Some hold that the evaluation of projects must necessarily be external since those who are connected with the project tend to give a "halo effect" to their evaluations. Others dispute the need for external evaluations. The present trend toward quantification of evaluations is counter to the oft-heard claim that many of the important outcomes of education cannot be expressed by numbers. Many claim that education has suffered from a lack of evaluation in the past and that this condition cannot be permitted to continue. Some would have programs submitted to cost-benefit analysis with their approval or disapproval being made on this basis.

Allocating Resources

Any state which plans to institutionalize planning within the SEA will have to recognize the need for, and commit funds to support its planning unit. This is the basic decision. Once this decision has been made certain steps should be taken that will probably not be greatly dissimilar from those taken by West Virginia.

The decision to establish a planning unit within the SEA is in a way a recognition that education is a complex enterprise and that planning techniques which have been developed in industry and other branches of government can be applied to education. This recognition implies that the decision to institutionalize planning will be accompanied by plans to staff and support the planning unit. An effective planning unit at the state level will require the commitment of considerable resources. The unit must be staffed with specialists both from within and without education. A data bank and information system must be established. Operating programs must be evaluated, monitored, and modified as required. Comprehensive planning includes the concept of continuous planning. It cannot be a "one-man operation." While the cost of an effective planning unit is sizeable, the cost of poor planning is even greater.

Funds to support planning are available from Titles III and V of the Elementary and Secondary Education Act. Funds for planning are provided also in a number of other Federal support programs. If, however, the support of education is to be a federal-state-local partnership, states which institute planning units should also commit state funds to support the planning effort.

Some resolution of the problems of planning and implementation may be found in the way in which the planning unit is structured. If the planning unit utilizes, in addition to the full-time planners, personnel from the SEA's operating divisions, the problem of implementation can be solved. Personnel who will be involved in the implementation and operation of a program will have participated in its planning. The involvement of operating personnel in the planning unit, however, poses still other problems. If the planning unit is to function properly, such personnel should be given full-time assignments to planning for specific periods of time. Bureau or division chiefs may be unable or reluctant to release operating personnel for planning assignments. They may rightly take the position that personnel requested to be assigned to planning already have full-time duties and that one "cannot be in two places at the same time." The solution to this problem, in turn, may rest with the involvement of top-level administrators in the process of planning for planning. If bureau or division chiefs understand the need for a particular planning project, if they have had a voice in deciding the project, and if they can see how their divisions will be benefited, they are more likely to be agreeable to planning assignments being given to personnel in their divisions. The problem of the use of personnel from operating bureaus was faced in West Virginia and resolved in this manner.

INITIATING PLANNING FUNCTIONS

The next step in institutionalizing planning in SEA's is for the planning units to commence planning. The prime objective of the Multi-State Comprehensive Planning Project was the development of models for comprehensive planning units. West

Virginia interpreted this to mean that the planning unit should commence the planning process as soon as possible and that the development of the state's model for planning would result from both the experiences gained in the Multi-State Project and the experience gained by the planning unit and the SEA as the planning unit began to function. This process appears to have worked in this state and is recommended to other states planning to institute planning units. As a result of the experiences of the past year, planning personnel have come to understand better their task and their limitations. The Department as a whole has accepted planners. General agreement has been reached concerning the responsibilities of the planning unit and the assessment of needs for planning personnel is more realistic now than at the inception of the project. It is expected that the process of defining the role of the unit will continue.

COMPREHENSIVE PLANNING UNIT

The West Virginia Comprehensive Planning Unit has been placed in a staff position and reports through the Director of Educational Planning to the Superintendent of Schools. The placement is considered to be crucial. If the planning unit is to be able to deal with all facets of the educational program, it must be outside the bureau structure of the agency.

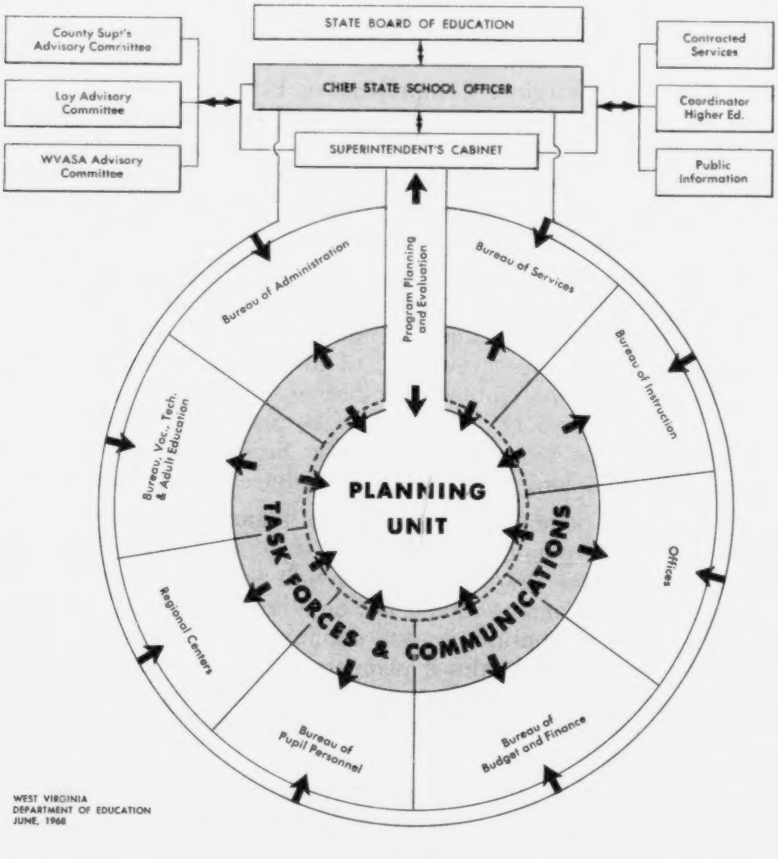
The planning unit will accept planning assignments from the State Superintendent, his executive assistant, or other staff members designated by the Superintendent. Normally, such planning assignments will have grown out of discussions and planning of the Superintendent's Cabinet or other advisory groups. The planning unit will also be able to initiate planning projects. Such projects will be recommended to the Superintendent and will be approved by him, usually upon the advice of his Cabinet.

A crucial point is the separation of planning and administration. Although planning is conceded to be one of the functions of administration, the SEA planning unit will operate on the assumption that planners should not be administrators. If planners are assigned responsibilities for administration, their time will soon be monopolized. Also if planners are to be able to establish rapport with administrative personnel, their duties must not infringe on the responsibilities of the administrative personnel, and this fact must be clearly delineated.

Figure 3 shows the relationship between planning and administration that is being established in the SEA. The structure shown is not an organization chart; it is instead a representation schematically of the relationship between the planning unit and the SEA administrative structure. The schematic portrays administration to be accomplished through the bureaus. It illustrates: (a) the communication relationship between the bureaus and the planning unit, (b) the sharing of bureau personnel on planning tasks forces, (c) the reporting function of the planning unit directly to the Superintendent of Schools or his executive assistant, and (d) the process by which advisory committees will assist in the planning endeavor.

FIGURE 3

A MODEL DEPICTING THE RELATIONSHIP OF THE PLANNING UNIT TO DEPARTMENTAL BUREAUS, THE ADMINISTRATION, ADVISORY COMMITTEES AND THE FORMULATION OF TASK FORCES



WEST VIRGINIA
DEPARTMENT OF EDUCATION
JUNE, 1968

The "task forces" shown in Figure 3 represent a concept that has grown during the past year as the model for planning was developed. Task forces formed by the planning unit including personnel from bureaus will be charged with the development of plans for specific facets of education. The utilization of planning task forces is a recognition that most planning assignments will be concerned with specific programs rather than with the development of a "master plan." The task forces also are an attempt to bridge the gap between planners and administrators. In helping to establish task forces, administrators have an opportunity to "plan for planning" and will be willing to commit resources, including personnel. This means that personnel from throughout the agency and outside consultants could be assigned to a task force. Similarly, bureau personnel will be able to participate in the development of plans which will affect their operations.

Task forces that are formed will function within the planning unit and their planning assignments will be determined to be part of the SEA's comprehensive planning effort. The task forces will differ from the past ad hoc committees appointed for planning tasks in that they will operate within a permanently established planning unit, will have full-time planners, and will provide for evaluation and recycling of planning.

INTEGRATION OF THE PLANNING UNIT

In the past, the West Virginia Department of Education, while recognizing a responsibility for leadership, had not emphasized long-range planning as a part of that leadership responsibility to the degree now required. The SEA had attempted to do comprehensive long-range planning, but such planning was generally problem oriented and the ad hoc planning groups were terminated upon the completion of each particular planning activity. In most cases the plans developed through these efforts provided for evaluation. Until the inception of the Comprehensive of the Comprehensive Planning Unit, however, the agency has not had the capability to do continuous comprehensive planning and evaluation. That is, it has had neither the personnel nor the resources; perhaps it also had not recognized the need for full-time planners.

Establishment of the planning unit was not without problems. Most agencies operate to an extent on tradition, i.e, doing things the way they have been done before. This perseverance of operating procedures should not be considered as bad; it is probably requisite to efficient operation. If procedures did not become routinized, agency functions would probably be near to impossible. At the same time, this routinization can interfere with change. Some good reason must be supplied to cause a person to exchange a procedure with which he is familiar for some new way of doing things. This is most likely to be true if the person sees the new approach as being something thrust upon him by someone else.

Resistance to change was to be expected among some Department members; it will likely be found also in other state educational agencies. In West Virginia, the technique being used to overcome such resistance is to provide for participation of administrative personnel in the development of plans for planning and for bureau personnel to be assigned to the planning unit, thus giving the administrative divisions of the SEA a voice in the planning process (This relationship is shown in Figure 3). The assumption is being made that people will identify with and promote changes which they have helped to plan. Similarly, regional and local educational personnel are being involved in the planning process.

Agency personnel identify with and build loyalties to the bureau to which they are assigned. The establishment of an Office of Planning and its placement in a position reporting directly to the Superintendent of Schools could pose a threat to some Department members. This would be especially true if the idea of comprehensive planning were interpreted to mean that the planning unit would have the sole planning responsibility or that the planning unit would be responsible in some way for administering programs which to date have been the responsibility of a particular bureau or division.

Still another difficulty encountered in the West Virginia Department of Education and assumed to be a problem in other state educational agencies as well, is that of communication. Ideas fail to get from one division to another or get lost some place between planning and implementation. To facilitate communication, as well as to provide a broad base for decision making, the State Superintendent has established a Cabinet which meets weekly and is composed of bureau heads and other key personnel. The Comprehensive Planning Unit is represented on the Cabinet. Further, planning assignments are made in Cabinet meetings. Plans developed by the planning unit which will have major impact or which will affect the agency as a whole will be reported to the Cabinet.

There have been other problems also, including financing, reporting, and logistics. Generally, however, there has been not only a recognition by department staff members of the need for a formal planning structure, but also cooperation from all concerned in the process of developing the State's planning model.

PLANNING UNIT OBJECTIVES AND RESPONSIBILITIES

Objectives: From the standpoint of purpose for its establishment, the goals for comprehensive planning are as follows

1. To enable the state educational agency to fulfill its leadership role through planning
2. To provide planning services to the bureaus, divisions and offices of the state agency and to local educational agencies
3. To stimulate and assist planning at the local and regional levels.

To achieve these goals, a planning unit has been established as the vehicle for directing the planning process. Four major objectives have been established for the planning unit. Specific purposes, functions, and responsibilities emanating from these objectives have been developed and will be treated later. The objectives for the unit are as follows:

1. The institutionalization of educational planning within the SEA and the establishment and staffing of a planning unit
2. The development of a model for a planning unit within the SEA
3. The application of modern techniques to the educational planning process
4. The development and continued refinement of a statewide comprehensive educational plan.

These objectives establish the principle role of the planning unit. The unit will provide planning services to the bureaus and divisions of the SEA as well as serving as the catalyst for planning. Specific purposes of the planning unit have been established as follows:

1. Provide a base for planning with full-time planners, and a broad spectrum of specialists
2. Provide for intra-agency and inter-agency involvement in educational planning
3. Provide a multi-discipline approach to planning

4. Provide alternatives to decision makers
5. Assist with the development of an information system
6. Assist with the development of a data bank
7. Apply modern planning techniques
8. Provide coordination of planning among bureaus and between the SEA and other agencies
9. Relate SEA educational planning to Federal, regional, and local educational plans
10. Develop immediate, intermediate, and long range plans
11. Strengthen regional and local educational agencies' planning capabilities.

Specific Responsibilities: Within the framework of the objectives of the Multi-State Project and the purposes enumerated above, the planning unit recommended and the Superintendent of Schools approved a list of specific responsibilities for the unit. These responsibilities are as follows:

1. Become the SEA's technical planning arm
2. Provide planning services to bureaus
3. Assume leadership in the establishment and up-dating of goals for education
4. Assist the SEA with the translation of goals to behavioral objectives
5. Assist with the assessment of the status of education in relation to stated goals
6. Assist with the establishment of priorities of needs
7. Formulate and recommend alternative long-range and intermediate plan for state educational services and programs
8. Relate bureau planning to the total comprehensive educational planning process
9. Assist with the implementation of plans, develop implementation strategy, and serve as consultant to bureaus and LEA personnel
10. Estimate costs of recommended alternatives
11. Develop plans for the collection of data for program evaluations and design data-gathering projects as required to provide planning information

12. Coordinate the development of guidelines for evaluating educational programs and services, including federal programs administered by the state.
13. Project enrollments, personnel, training and facility needs, and costs
14. Ensure evaluation of adopted programs
15. Recycle the planning process.

SERVICES PROVIDED BY THE PLANNING UNIT

Comprehensive educational planning includes planning for instruction, administration, finance, and auxiliary services. It includes all facets of education under the jurisdiction of the agency. Thus, comprehensive planning affects all bureaus and offices of the Department of Education and all levels for which the SEA has responsibility. The comprehensive planning unit will provide planning services to all units in the SEA. It will establish a relationship with other departmental groups that will enable it to provide services to Department bureaus and operating units, and to coordinate plans developed by bureaus, counties, and regions into a comprehensive plan for education in the state. The planning unit will have a staff function only. It will be organized and staffed to provide the technical services required for formal comprehensive planning. The planning will be program oriented. The unit will be responsible for the development of immediate, intermediate, and long-range plans and for coordinating plans within the Department and plans of the Department with those of other agencies and governmental units.

Planning: The provision of comprehensive planning services by the planning unit will include services for the Department of Education and services for local and regional agencies. Programs which require the allocation of additional resources or significant shifts in allocations will be referred to the unit. These will include expanded operating programs and significant program changes. The preparation of guidelines required for state plans for federal programs will also be referred to the planning unit for study and recommendations.

Planning assignments given to the comprehensive planning unit, based on the criteria of additional resources or significant program changes, are expected to represent major program planning; the planning of minor program changes, programs affecting one bureau or division only or strategies within a bureau or division will normally be done by bureau personnel. However, the planning unit will be available to assist bureaus in planning of any kind. Some specific aspects of the educational program that are expected to be referred to the comprehensive planning unit are as follows:

1. Development of plans which will become part of the SEA's legislative program
2. Proposed changes in the organizational plan of the Department of Education
3. Assistance with the preparation of state plans for federal programs
4. Development of an information system for the SEA which is compatible with that of state government, and the development of procedures and priorities for the implementation of the system
5. Development of a continuing program of assessment and evaluation
6. Assistance to local and regional units in their planning
7. Development of plans for consolidation or reorganization of school districts
8. Integration of plans into a state-wide plan for educational programs and services
9. Cost-benefit analysis of programs and services
10. Stimulation of planning among LEA's
11. Stimulation of research and development among LEA's
12. Stimulation of innovation among LEA's
13. Continuing study of the planning, research and development capability of the SEA, including the comprehensive planning unit.

Planning techniques which have developed outside education involve the proposal of alternatives rather than the development of a plan. The acceptance of this concept by West Virginia school administrators has been difficult. The idea is counter to the usual past practice of developing through appropriate study and staff participation "a program" which would be recommended to a governing board, the Legislature or other decision makers. While the administrator who follows this practice is usually prepared to settle for an alternative, he expects that those alternatives will likely be compromises between what he is proposing and what the decision maker is willing to give. The provision of alternatives, even evaluated alternatives, to decision makers by school administrators is a new procedure to most administrators. The superiority of this practice will have to be substantiated over past practices.

The comprehensive planning unit will, as a normal procedure, prepare plans in the form of alternatives. These will include estimates of needs, costs, and effectiveness of the recommended alternatives, procedures for implementation and evaluation, and the establishment of priorities among needs. The unit, in its staff position, will be responsible for providing documented recommendations and cost estimates to the Superintendent of Schools or through him to other decision makers.

Assessment of Status and Needs: One of the specific responsibilities listed earlier for the comprehensive planning unit is that of assisting with the assessment of needs. Assessment is a necessary part of planning and is a logical concern for planners. Assessment, however, is a responsibility also of personnel charged with implementing and administering programs. The Department has developed the concept that planners assist administrators to implement adopted programs through the development of strategies and techniques. The planning unit will not implement nor administer programs. Thus, the comprehensive planning unit *will assist with assessment* but *will not make assessment*. Similarly, the unit *will assist with evaluation* but *will not evaluate programs*. In both cases the planning unit will develop strategies and procedures, supply technical consultation, assist in the preparation of portions of state plans for the various federal programs requiring state plans, and ensure that adequate assessment procedures are built into local, regional, and state programs. The planning unit will take leadership in the development of goals and objectives on which assessment is based. The actual assessment of needs, however, usually will be made by the SEA's bureau personnel.

The goals and objectives for each program are the criteria upon which assessment must be made,. This fact has always been recognized. Yet, in the past, many programs in West Virginia apparently have been built upon little more than a "feeling" on the part of administrators that there was a need which the program would meet. This has been true primarily because educators have not usually expressed goals in operational or measurable terms. Goals such as "worthy home membership" have a place in planning but they do not lend themselves to an assessment of need. Assisting administrators to express goals as behavioral objectives and in developing strategies for measuring the degree to which these objectives are met will be a function of the comprehensive planning unit.

The planning unit has already begun to assist the SEA with assessment. One of the unit's first assignments was the development of a statement of the SEA's goals for education and the translation of these goals into operational terms. The SEA's goal statement, though recent and the result of much staff study, is not in its present form an adequate basis for an assessment of education in the state. The planning unit, in cooperation with the Human Resources Research Institute at West Virginia University, will develop operational objectives based on the SEA's goal statement, set acceptable criteria levels, identify variables, ascertain source of relevant data, generate data in machine-readable form, subject data to computer treatment, and analyze, interpret, and report the results of the assessment to the SEA.

The planning unit will be concerned with the development of the assessment portions of state plans for federal programs and the assessment procedures of local and regional plans that are submitted to the SEA for approval. Since procedures for both assessment and evaluation are usually required to be stated in the state plans, the participation of the planning unit in their preparation is necessary. The planning unit has already participated in the preparation of state plans for the revised ESEA Title III and the Educational Professions Development Act and will continue to perform this function.

Evaluation: Evaluation is viewed by the SEA as a planned process designed to produce data for use in monitoring projects. The results from evaluations are likely to be useful also for instructional and public relations purposes. For the purpose of planning, however, evaluation produces data necessary to decision-making to continue programs, modify programs, or terminate programs.

There is obviously more than one kind of evaluation. Along one dimension evaluation may be *quantitative*, *qualitative*, or fall at some other point along a continuum that would include other aspects of evaluation. Evaluation may be classified according to its relation to programs in time — *predictive*, *monitorial*, or *post mortem*. Evaluation may also be concerned with input or output criteria. The terms *context*, *process*, and *product* have been used to describe the different kinds of evaluations. It is likely that most evaluations will include more than one type. However, one requisite for evluation, if it is to be adequate, is that it be preplanned. The evaluative procedures should be "built in"; they cannot be "tacked on."

The position of the comprehensive planning unit with regard to evaluation will be similar to that for assessment. The planning unit will assist with evaluation through the preparation of guidelines for evaluation and the necessary consultation with administrative personnel to ensure that the evaluative procedures produce results which can be recycled into the planning process. Many educators in West Virginia, as in other states, have in the past made evaluations which are largely subjective. The planning unit will assist the SEA and local and regional units to state objectives operationally and to quantify, to a greater degree than at present, measures of the results obtained from programs. The unit will ensure also that appropriate data gathering and treatment procedures are built into program plans.

A major emphasis to be placed by the SEA will be its efforts to improve evaluative procedures as a part of program planning. The planning unit will strive to build evaluation into all plans which it is asked to develop, will assist bureau administrators to build evaluation into plans that they develop, and will advise administrators as to the adequacy of the evaluative procedures to be submitted by operating districts for approval. At the same time that the SEA will seek to incorporate evaluation into programs because it is recognized that many ongoing programs have less than precise plans for evaluation. The planning unit will, therefore, assist the SEA to improve the evaluation of programs already in operation. Thus, the responsibilities of the planning unit will include both assistance with the preparation of evaluative plans for new programs and the improvement of evaluative procedures for programs already operating.

Dissemination: Dissemination is considered to be a responsibility of administration and of the SEA's administrative bureaus. The SEA has a Publications and Public Relations Unit located in the Bureau of Administration. However, dissemination procedures need to be planned as programs are planned. Thus, the planning unit will be concerned with the development of plans for dissemination and public relations.

PERSONNEL REQUIREMENTS

Responsibilities determine personnel requirements. Based on the experience of approximately one year of operation, personnel requirements for the planning unit for the next two to five years have been estimated. They are shown below: (depending on the size of the state and the functions assigned to the planning unit.)

1. Director, Office of Education Planning — educational generalist and administrator of the unit; training to include doctorate or equivalent in terms of experience or specialized training.

2. Director of Research — research specialist; training to include doctorate or equivalent in terms of experience or specialized training; experience to include administration of college, university, or foundation research projects.
3. Director, Special Planning Projects — specialist, change agent or educational futurist; training to include doctorate or equivalent in terms of experience or specialized training; experience to include educational planning and curriculum construction.
4. Experimental Design Analyst — specialist in research design, statistical techniques and data applications; training to include doctorate or equivalent in terms of experience or specialized training; research experience required.
5. Operations Research Specialist — specialist from other discipline, probably economics; trained planner; master's degree in planning or equivalent.
6. Appropriate secretarial and clerical personnel.
7. Consultants — specialists in fields as required, both within and without the state.
8. Interns — graduate students from the state universities who, as part of their graduate program, are assigned to the SEA for specified planning projects or for specific periods of time.

The staffing pattern outlined above for the planning unit has grown out of the SEA's experiences during its participation in the Multi-State Project. Perhaps the most significant points are: (1) personnel are to be assigned full time to planning, and (2) some personnel will be recruited from outside the education profession.

The SEA believes that planning techniques which have been developed by business, industry, and other branches of government can be adapted to education, and that the application of these techniques will require persons with training and experience in systems analysis, program budgeting, and related techniques. Thus, the planning unit is seen as requiring a mix of educational generalists, trained planners, and research design specialists. Specialists in education (supervisors presently assigned in the Bureau of Instruction), interns, and consultants will complete the professional staff. The SEA views the use of interns both as a device for training educational planners and as a source of needed personnel.

The use of consultants, and the budgeting of funds for them, is seen as being necessary to afford the planning unit the capability to deal with many different kinds of educational problems. Probably no SEA planning unit, at this time, can be staffed with a sufficient variety of specialists to be able to prepare plans for all facets of the educational program. The program of education in a state is too complex and includes facets too diverse for one team to handle. The provision for the use of consultants is necessary to give the planning unit the needed pool of experts.

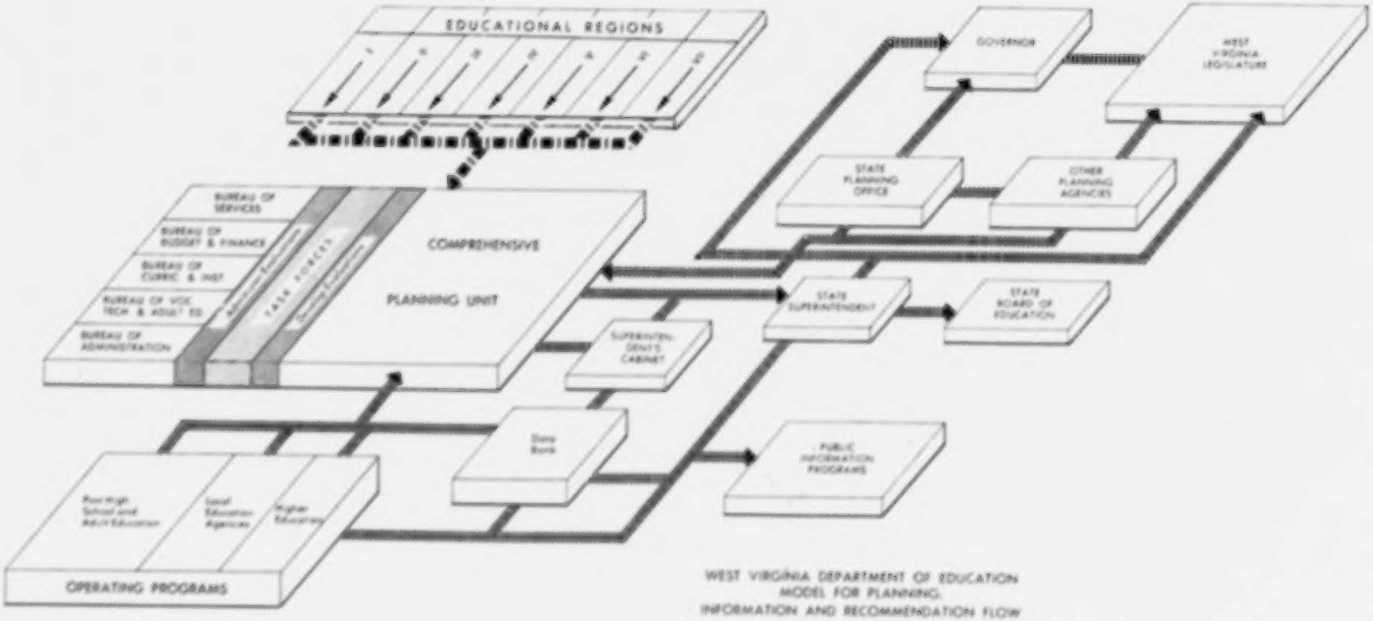
LIAISON WITH AGENCIES INVOLVED IN EDUCATIONAL PLANNING

In West Virginia groups and agencies other than the Department of Education do educational planning (see Appendix A). Consequently, a comprehensive planning unit within the SEA must establish relationships with such groups and agencies, as well as establish relationships with other divisions of the SEA. Figure 4 shows a model which has been developed for the state. It is recognized that the model is rather complex. The model, however, depicts a complex condition. It is hoped that the chart will assist the reader to further understand West Virginia's model for comprehensive educational planning.

The model shows the comprehensive planning unit to be the recipient of a flow of information from all levels of education, from the Department of Education bureaus, from the seven regional organizations, and from other planning agencies. The model shows the planning unit to have access to data from a data bank. This data bank has already been established and computerized, and has the capacity to expand to meet the needs of the SEA and other agencies. The model implies the development of an information system, which is being established. The model depicts the planning unit utilizing available information to develop program plans which, in turn, will be communicated to the States Superintendent or through him to other decision makers.

Figure 4 shows channels of communications of the planning unit with other agencies, and a structure for coordination of the planning of the SEA with that of other groups. As viewed by the SEA, there are no duplications or contradictions among the separate models presented in this report. The individual models have been prepared to emphasize different aspects of the communication relationship structure. Both the Governor's Comprehensive Planning Committee and the State Planning Office recognize the responsibility of the SEA for educational planning. The SEA, in turn, recognizes its limitations and a need to cooperate

FIGURE 4



WEST VIRGINIA DEPARTMENT OF EDUCATION
MODEL FOR PLANNING,
INFORMATION AND RECOMMENDATION FLOW

with other state agencies and groups in order for educational plans to be a part of the comprehensive planning for the state.

Advisory Council: The Governor's Comprehensive Educational Planning Committee will serve as a steering or coordinating committee. In addition, an advisory council or "sounding board" will be established to give a broad base to planning and assist with the implementation of plans that are developed. The advisory council will provide ideas for planning and will serve as a testing ground for the task forces and for the CEPC. The council will be appointed in the near future. The council members will be community leaders throughout the state. They will be kept informed of the progress of the planning project, will meet in regional groups, and will meet at least once in a state-wide meeting. Members will be asked to serve also on advisory committees to county boards of education, and to multi-county groups for the development of regional plans.

Correlation with Local Boards: Long-range plans for state-wide programs must be coordinated with plans developed by local boards of education. In order to accomplish this coordination, the county school systems will be asked to develop and submit to the State Superintendent long-range plans. Guidelines for the development of such plans will be published by the Department of Education and will cover educational programs, population projections, costs of education, financial ability, relationships to be established among counties, and the relationship of school services to the services provided by other governmental agencies.

Divided Responsibility for Education: The fact that West Virginia University has a separate governing board and that colleges and public schools have planned separately in the past has also posed problems. Unsuccessful attempts have been made in the last two sessions of the West Virginia Legislature to effect a reorganization of the governing structure for higher and public education. It is likely that reorganization will be attempted again. It is hoped that, if and when reorganization succeeds, a better coordinating structure will result.

CHAPTER 5

Summary

The West Virginia Department of Education has joined with five other states and the Commonwealth of Puerto Rico in the development of models for comprehensive educational planning units within the state educational agencies. It was anticipated that the planning models would differ among the participating states. The structure and development of the West Virginia model has been presented in this report.

The West Virginia SEA has considered planning to be one of its leadership functions. Planning has been accomplished through the SEA's bureau structure and through committees, commissions, and task forces composed of SEA members, LEA personnel, and lay citizens. Because of the increasing complexity of the educational process and the rapidly rising costs of education, the SEA will give increased emphasis to rational planning and will formalize planning through the establishment of a comprehensive planning unit.

The West Virginia Department of Education regulates but does not operate the schools. The schools are operated by county boards of education. Consequently, the SEA's planning effort must be related to and should serve to coordinate the local efforts. The SEA has established educational regions within the state and will continue to encourage regional planning. Also educational planning in the state must be related to the planning of other state agencies.

The West Virginia model for comprehensive educational planning places the planning unit in a staff position outside the SEA's bureau structure and reporting directly to the Superintendent of Schools. The planning unit will be staffed with educational generalists, research specialists, and operations analysis specialists. Funds will be budgeted for consultant services required to give capability for planning in all areas of education. In addition to staff assigned full time, the planning unit will be able to draw on the SEA's bureau personnel for part-time assignments and will utilize graduate students from the state universities on specific planning tasks.

Programs involving a significant allocation of resources, programs for which major changes are proposed, or programs in which more than one bureau of the SEA is involved will be referred to the unit for study and recommendation. The planning unit will provide agency-wide planning services for the SEA. It will prepare and recommend evaluated alternatives to decision makers, develop procedures for assessment and evaluation, and will assist administrators with the implementation of adopted plans. The planning unit will not administer programs.

The West Virginia Department of Education is prepared to commit resources to strengthening the planning process by developing a planning unit because it believes that its former planning capability needed improvement. The complexity of the educational establishment and the rising costs of educational programs require rational planning. A comprehensive planning unit within the Department appears to offer the best opportunities for rational and comprehensive educational planning.

Appendix A

Educational Planning by Other Agencies

Public education, kindergarten through high school graduation, including vocational education, is under the control of the West Virginia Board of Education. The state colleges and one of the two state universities are also controlled by this board. Some functions, however, which in many states are assigned to SEA's, are controlled in West Virginia by other boards or agencies, for example schools located in the boys' and girls' correctional institutions are under the Institutions Commissioner. Consequently, other agencies both public and private engage in educational planning for their respective areas of responsibility.

LEGISLATURE

For many years the West Virginia Legislature, in response to particular problems, has directed its Committee on Government and Finance to study one or more facets of education. These studies have usually been made by a consultant, consultant firm, or university field service group. In other instances, interim committees have directed studies to be made by the Department of Education.

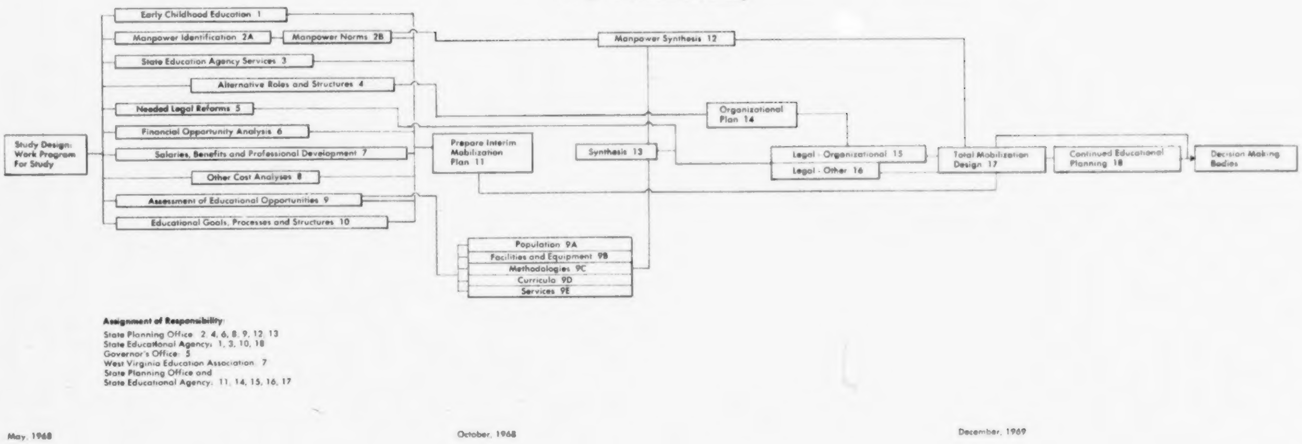
Two legislative studies were authorized by the 1967 Legislature and have just been completed. They were a study of Vocational Technical and Adult Education, and a study of the West Virginia School Support Formula, which is the minimum foundation program for the state. A study of the Educational Program for Exceptional Children was authorized by the 1968 Legislature.

STATE PLANNING OFFICE

The State Planning Offiice, a division of the Department of Commerce, has been designated by the Governor as the agency responsible for the coordination of planning among all state agencies. The State Planning Office considers educational planning to be an essential portion of its planning responsibilities and has allocated funds and assigned personnel to work with the Governor's Committee and the Department of Education to complete the seven studies chosen by the Governor's Comprehensive Educational Planning Committee, described below.

FIGURE 5

West Virginia
State Planning Office
Strategy for Educational Planning


Study Design: Work Program For Study
Early Childhood Education 1
Manpower Identification 2A
Manpower Norms 2B
State Education Agency Services 3
Alternative Roles and Structures 4
Needed Legal Reforms 5
Financial Opportunity Analysis 6
Salaries, Benefits and Professional Development 7
Other Cost Analyses 8
Assessment of Educational Opportunities 9
Educational Goals, Processes and Structures 10
Prepare Interim Mobilization Plan 11
Population 9A
Facilities and Equipment 9B
Methodologies 9C
Curricula 9D
Services 9E
Manpower Synthesis 12
Synthesis 13
Organizational Plan 14
Legal - Organizational 15
Legal - Other 16
Total Mobilization Design 17
Continued Educational Planning 18
Decision Making Bodies
May, 1968
October, 1968
December, 1969

Assignment of Responsibility:
State Planning Office: 2, 4, 6, 8, 9, 12, 13
State Educational Agency: 1, 3, 10, 18
Governor's Office: 5
West Virginia Education Association: 7
State Planning Office and
State Educational Agency: 11, 14, 15, 16, 17

The State Planning Office serves as the coordinating agency, leaving long-term educational planning as the responsibility of the Department of Education. A flow model for the studies by the State Planning Office has been developed which leads to a report for the 1969 Legislature. A further report for subsequent legislative consideration and a phasing-out of the State Planning Office is shown as Figure 5.

Both the Department of Commerce and the Department of Education have divided the state into regions. While the Department of Commerce's regions are designed on an economic basis, they are similar to the regions established for education. The Department of Commerce is cooperating in the development of comprehensive plans for each of the economic regions. These plans will include data regarding school and educational services needs.

Higher Education Commission

The West Virginia Higher Education Commission was created by the 1964 Legislature. It is charged with making studies concerning academic facilities and related activities of the state colleges and universities. The Commission is presently engaged in a three-year study. Phase I, which is completed, concerns facilities and enrollments. Phase II will be concerned with a program inventory to include course data with enrollments per course in each institution. Phase III will deal with faculty, budgets, and personnel utilization.

The Higher Education Commission's reports are prepared for the governing boards of the institutions, for the State Superintendent of Schools, and for Legislative Committees. Data collected and interpretations made are available to SEA personnel and others who have a need for them. The Commission has an executive secretary and a small staff. Coordination of Commission planning with SEA planning is achieved through voluntary cooperation, through the fact that both report to the West Virginia Board of Education, through the State Planning Office, and through the Governor's Comprehensive Educational Planning Committee.

The Higher Education Commission is a permanent agency of the state. Upon completion of its three-year study, it will continue to develop plans for higher education and will recycle and up-date plans already made.

Committee on Higher Education

The 1965 West Virginia Legislature authorized the Governor to establish a Committee on Higher Education and directed it to study the allocation of functions among the state colleges and universities. In October, 1966, this committee reported a plan for a complete reorganization of the governing boards of the state colleges and universities, which included removing control of the state colleges from the West Virginia Board of Education where it now resides. The Committee's recommendations failed to pass in the 1967 Legislature and were re-introduced, along with a number of other reorganization proposals, into the 1968 Legislature. All proposals failed again in 1968, but it is expected that reorganization proposals will be introduced into subsequent Legislatures.

EDUCATIONAL BROADCASTING AUTHORITY

An Educational Broadcasting Authority was established by the 1963 Legislature for the purpose of extending education and instruction through the use of radio, television, and related media. According to the terms of the act, the Authority is authorized to establish broadcasting facilities and to cooperate with local and state educational agencies in planning and developing the use of educational radio and television. The Authority, through studies and the use of consultants, has developed a state-wide plan for educational broadcasting, including the location and frequency (or channel allocation) of broadcasting facilities. The Authority employs an executive secretary and staff. It has worked with counties, colleges and universities, and the SEA to promote educational broadcasting.

ASSOCIATIONS

The West Virginia Education Association and some of its affiliates, particularly the West Virginia Association of School Administrators, have emphasized and continue to emphasize planning as one of their functions. The Association of College and University Presidents, the West Virginia Association for Retarded Children, the State Commission on Mental Retardation, the West Virginia Vocational Association all develop plans for their areas of special interest.

For some years the most active private planning group has been the West Virginia Education Association, WVEA. This group has also been very active in promoting its programs in the Legislature and has been successful in getting a number of its plans enacted into law. While the WVEA has placed major emphasis on teacher welfare legislation, it has not confined itself to this area. Presently the WVEA has committees studying early childhood education, a basic education program from primary school through the junior high school, education beyond the high school, higher education, personnel, tools and facilities, organizational structure, and the financing of education.

COMPREHENSIVE EDUCATIONAL PLANNING COMMITTEE (CEPC)

In July 1967, Governor Hulett Smith appointed a Comprehensive Educational Planning Committee (CEPC) and charged it with the responsibility for developing recommendations for needed legislation to be presented to the 1969 Legislature. The CEPC designated the Department of Education as its "technical arm" and recognized the Department as the agency responsible for planning for public education. The CEPC selected the West Virginia Director of the Multi-State Planning Project as its executive secretary.

The CEPC has accepted the responsibility for the immediate coordination of the planning efforts of the various groups and state agencies which are engaged in educational planning. Coordination for state agencies is provided through the Governor's office. For professional associations and other private groups, coordination is on a voluntary basis. Conferences have been held and lines of communication established to provide for communication and mutual assistance among the various planning groups. Discussions to date indicate that most of the planning groups are willing to share information and to attempt to develop a coordinated long-range plan for education in West Virginia.

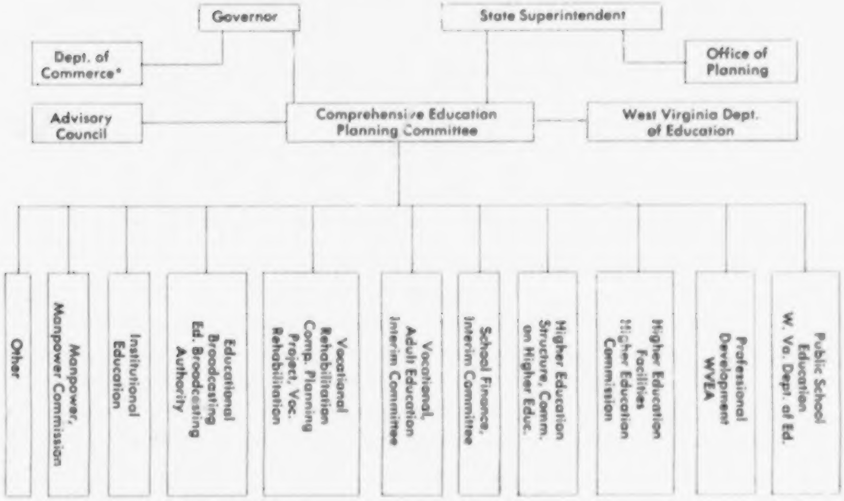
Studies of various facets of education are currently being made by different groups and agencies. Additional studies probably will be needed. Coordination is needed if a Comprehensive Educational Plan is to be developed. Goals for the total education program need to be stated and the goals sought for different facets need to be related. A suggested structure which would permit groups presently engaged in educational planning and additional needed "task forces" to coordinate their efforts is shown below:

Over a brief period of time the CEPC has developed a planning structure designed to provide coordination of the various studies being made of education and the studies related to education. Figure 6 shows the structure approved by the Committee in January 1968. The Committee approved additional studies of selected facets of education. Studies to be made, personnel involved, and sources of funds are as follows:

1. Services of the State Educational Agency; to be done by the Department of Education; funds to be provided by the Department of Education

FIGURE 6

Structure for Educational Planning


Governor
State Superintendent
Dept. of Commerce*
Office of Planning
Advisory Council
Comprehensive Education Planning Committee
West Virginia Dept. of Education
Other
Manpower, Manpower Commission
Institutional Education
Educational Broadcasting Ed. Broadcasting Authority
Vocational Rehabilitation Comp. Planning Project, Voc. Rehabilitation
Vocational, Adult Education Interim Committee
School Finance, Interim Committee
Higher Education Structure, Comm. on Higher Educ.
Higher Education Facilities Higher Education Commission
Professional Development WVEA
Public School Education W. Va. Dept. of Ed.

* The Department of Commerce, by executive order, has been given the responsibility for the coordination of planning for all departments of state government.

Charleston Educational Planning Committee

October 10, 1967

2. Early Childhood Education; to be done by the Department of Education; funds to be provided by the Department of Education
3. Equalizing Educational Opportunities; to be done by State Planning Office; funds to be provided from HUD 701; 25% state matching required
4. Educational Manpower and Staff Utilization; to be done by the State Planning Office; funds to be provided by HUD 701; 25% state matching required
5. Mobilizing for Change; to be done by State Planning Office; study may be contracted in whole or in part; funds to be provided by HUD 701; 25% state matching required
6. Needed Legal Reforms; to be done by Governor's Office; services to be supplied by the Governor's Office

7. Salaries, Benefits, and Professional Development; to be done by the West Virginia Education Association through its regular planning channels.

Studies to be made by the CEPC are being made in a framework of four alternative assumptions as follows:

1. The continued existence of county school districts
2. Cooperative arrangements between and/or among counties for the provision of multi-county services
3. Reorganization of school districts to provide districts adequate to support comprehensive services
4. A state operated system of public education.

Each study is directed toward three "publics," i.e., the Legislature, professional educators, and the general public. All studies will be reported to the Legislature at a legislative seminar called by the Governor to consider problems of education, roads, taxation, and finance and scheduled to be held in December 1968.

INFORMATION SYSTEMS

One of the phenomena that affect educational planners is the information explosion. There are so many data emerging from programs in operation and those being planned that the information problem is more likely to be a problem of locating information than it is to be a lack of information. At the same time that the quantity of available information is burgeoning, computers are being developed that have almost unlimited capacity for information storage and retrieval. The key to the information problem, then, is the development of a system for gathering and storing information that is relevant, current, and valid. Without the system, planners and decision makers are likely to be lost in a plethora of unclassified and unusable data. It may be that one of the most "salable" commodities that planners have to offer is organized information.

At the same time that the SEA is establishing an educational data base, the state is developing an information system for planning and management. The State Planning Office, in cooperation with the other state agencies concerned, has developed a planning structure and an information system for the state. In each instance the SEA was one of the participating agencies and the systems being developed for education are compatible with those of other state agencies.

The Governor and the Commissioner of Commerce, in his role as state coordinator of federal funds, decided in 1966 that an information system would facilitate the operation of state government and began to work with consultants to develop a system to fit the needs of West Virginia. The system which was chosen has been entitled "Functional Program Planning," FPP.

Functional Program Planning incorporates a rather new *group* of ideas embodied in information system theory and system design. These ideas together with resource allocation form a system which relates objectives, plans, and activities, across agency lines and to available revenues and resources. The system is an adaptation of PPBS considered to be applicable to West Virginia.

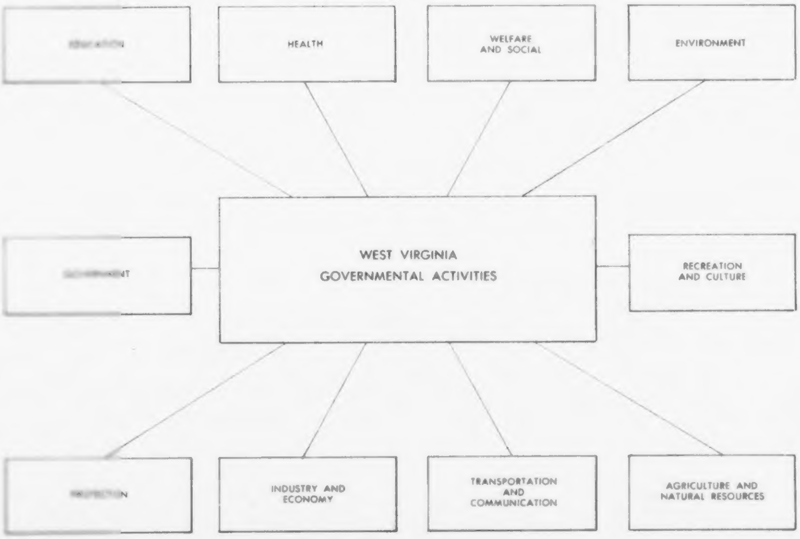
The system assumes that the governmental activities of West Virginia can be grouped into ten functional areas as shown in Figure 7. While the system does not propose a governmental reorganization, it does suggest that some changes might be made in the planning for governmental activities.

As expressed by the State Planning Office, the aims of the FPP system are as follows:

1. Reduce the complexity of government operations and thus increase the efficiency and effectiveness of programs

FIGURE 7

FUNCTIONAL PROGRAM PLANNING RELATIONSHIPS



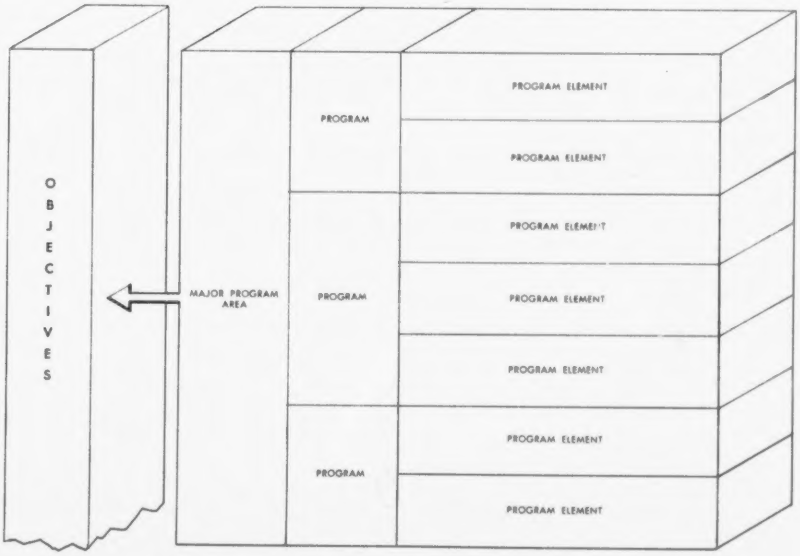
2. Channel federal aid more effectively into the areas where it is most needed
3. Supply federal agencies with the kind of information they need for grant purposes
4. Compile relevant information about governmental activities
5. Indicate the full implications of governmental activities
6. Present alternative courses for these activities.

More specifically FPP will assist planners and decision makers in –

1. Identifying needs and devising long-range objectives to guide comprehensive planning
2. Using the objectives devised as guides for public and private investment and for the operation of state governmental agencies
3. Developing and maintaining a strong program planning capability

FIGURE 8

FUNCTIONAL PROGRAM PLANNING STRUCTURE



4. Translating objectives into plans and programs to be carried forward
5. Analyzing programs in terms of their investment requirements and potential benefit to West Virginians.

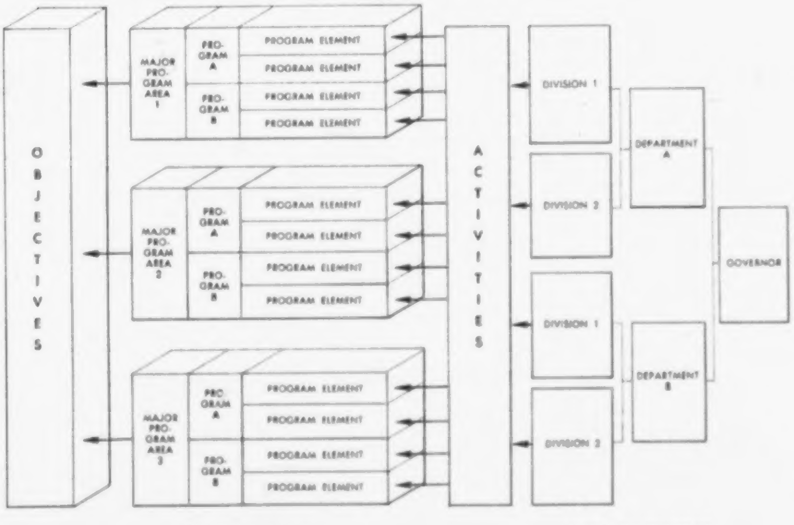
Figure 8 portrays the structure of FPP. Each major program is focused on a set of objectives, which are operationally stated. The programs and program elements build upon one another successively to make up major program areas.

From the program elements come the activities which are to actually achieve the governmental objectives. Figure 9 shows how Functional Program Planning organizes the activities and focuses them on the ultimate objectives. Just as responsibility must necessarily be focused upon the apex of the administrative structure, so must activities be focused upon their apex, objectives. Functional Program Planning is designed to organize activities around objectives and to make program planning, management, and evaluation a more continuous function.

The Department of Education has assisted the State Planning Office to develop a tentative program structure for education. This structure is shown in Appendix B. Initially the SEA will utilize this structure in program planning and public information. Later, however, it can become the basis for a planning programming budgeting system.

FIGURE 9

OBJECTIVES – PROGRAM STRUCTURE



Appendix B

* Functional Program Planning

(Suggested Program Structure for Education)

- 000000 EDUCATIONAL SYSTEM DEVELOPMENT
  - 010000 Preschool, Elementary, and Secondary[1]
    - 010100 Administration & Related Services[2]
      - 010101 Administrative Coordination[3]
      - 010102 Administrative Materials
      - 010103 Personnel Overhead (Annual Leave, Sick Time)
    - 010200 Facility Provision
      - 010201 Provision of Space
      - 010202 Provision of Equipment
      - 010203 Maintenance Activities
    - 010300 Fiscal Control Activities
      - 010301 Comptrolling Activities (Bookkeeping)
      - 010302 Budgetary Activities
      - 010303 Auditing Activities
    - 010400 Research Activities
      - 010401 Consultant and Evaluation Assistance
      - 010402 Inservice Research Training
      - 010403 Dissemination of Findings
      - 010404 Education Systems Development Research
    - 010500 Developmental Planning Activities
      - 010501 Curriculum Development Planning
      - 010502 Supportive Services Development Planning

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* State of West Virginia, Department of Commerce, State Planning Office

[1] Major Program Area
[2] Program
[3] Program Element

- 010503 Legal and Organization Planning (Structure)
- 010504 Coordination and Assistance to School Financial Planning
- 010505 Coordination and Assistance to other Educational Planning Activities
- 010506 Facility Planning

011000 Instructional Activities
  - 011001 Pre-Elementary Educational Programs
  - 011002 Instruction in the Arts & Crafts (Music)
  - 011003 Instruction in Language & Literature
  - 011004 Instruction in Social Studies
  - 011005 Instruction in Physical Sciences
  - 011006 Instruction in Biological Sciences
  - 011007 Instruction in Mathematics
  - 011008 Health and Physical Education
  - 011009 Business Education
  - 011010 Home and Family Instruction
  - 011011 Driver Education
  - 011012 Instruction in Agriculture
  - 011013 Instruction in Industrial Skills
  - 011014 Technical Instruction

011100 Educational Guidance Counseling and Testing
  - 011101 Aptitude, Interest, & Achievement Testing
  - 011102 Vocational and Academic Guidance Counseling
  - 011103 Personal & Psychological Counseling
  - 011104 Development of Guidance & Psychological Services

011200 Teacher Regulation and Development
  - 011201 Compilation of Professional Studies and Statistical Report
  - 011202 Licensure, Classification, and Certification of Teachers
  - 011203 Development, Evaluation, and Accrediation of Teachers Preparation Programs

- 011204 Preparation and Distribution of Publications and Procedures

- 020000 Higher Education
  - 020100 Administrative and Related Services
    - 020101 Administrative Coordination
    - 020102 Administrative Materials
    - 020103 Personnel Overhead
  - 020200 Facility Provision
    - 020201 Provision of Space
    - 020202 Provision of Equipment
    - 020203 Maintenance Activities
  - 020300 Fiscal Control Activities
    - 020301 Comptrolling Activities
    - 020302 Budgetary Activities
    - 020303 Auditing Activities
  - 020400 Research Activities
    - 020401 Institutional Research
    - 020402 Government Sponsored Research
    - 020403 Other Sponsored Research
    - 020404 Public Contributed Research
  - 020500 Developmental Planning Activities
    - 020501 Curricula Development Planning
    - 020502 Innovative Planning
    - 020503 Facility Planning
  - 021000 Academic & Professional Programs
    - 021001 Undergraduate Agriculture Programs
    - 021002 Undergraduate Biological Science Programs
    - 021003 Undergraduate Business and Commerce Programs
    - 021004 Undergraduate Computer Science and Systems Analysis Program
    - 021005 Undergraduate Education Programs
    - 021006 Undergraduate Engineering Programs
    - 021007 Undergraduate English and Journalism Programs
    - 021008 Undergraduate Fine and Applied Arts

- 021009 Undergraduate Foreign Languages and Literature
- 021010 Undergraduate Health Professions Programs
- 021011 Undergraduate Home Economics Programs
- 021012 Undergraduate Mathematical Subjects Programs
- 021013 Undergraduate Military Sciences Programs
- 021014 Undergraduate Philosophy Programs
- 021015 Undergraduate Physical Sciences Programs
- 021016 Undergraduate Religion Programs
- 021017 Undergraduate Social Sciences Programs
- 021018 Undergraduate Forestry Programs
- 021019 Graduate Programs
- 021020 Professional Programs

021100 Extension Programs
- 021101 Continuing Credit Programs
- 021102 Continuing Non-Credit Programs
- 021103 Federally Assisted Programs
- 021104 Community Development Programs

021200 Housing Services
- 021201 Facility
- 021202 Student
- 021203 Leased
- 021204 Other

021300 Library Service
- 021301 Learning Center
- 021302 Resource Center
- 021303 Departmental
- 021304 Cooperative Ventures
- 021305 Circulation Services
- 021306 Cultural Services
- 021307 Facilities

030000 Compensatory Education

030100 Administrative and Related Services
- 030101 Administrative Coordination

  - 030102 Administrative Materials
  - 030103 Personnel Overhead
- 030200 Facility Provision
  - 030201 Provision of Space
  - 030202 Provision of Equipment
  - 030203 Maintenance Activities
- 030300 Fiscal Control Activities
  - 030301 Comptrolling Activities
  - 030302 Budgetary Activities
  - 030303 Auditing Activities
- 030400 Research Activities
  - 030401 Research in Education for Mentally Retarded
  - 030402 Research in Education for Physically Disabled
  - 030403 Reesarch in Education for Environmentally Disadvantaged
- 030500 Developmental Planning Activities
  - 030501 Compensatory Instruction, Administration, and Curricula Development Planning
  - 030502 Compensatory Education Facilities & Facilities Utilization Development Planning
- 031000 Compensatory Education for the Physically Disabled
  - 031001 Physical Therapy & Counseling
  - 031002 Compensatory Basic Education
  - 031003 Vocational Rehabilitation
- 031100 Compensatory Education for the Mentally Handicapped
  - 031101 Counselling
  - 031102 Compensatory Basic Education
  - 031103 Vocational Rehabilitation
- 031200 Compensatory Education for the Environmentally Disadvantaged
  - 031201 Guidance and Counselling Services
  - 031202 Preschool Basic Education Programs
  - 031203 Remedial Education Programs
  - 031204 Vocational and Technical Education Programs

- 040000 Correction Education
  - 040100 Administration and Related Services
    - 040101 Administrative Coordination
    - 040102 Administrative Materials
    - 040103 Personnel Overhead
  - 040200 Facility Provision
    - 040201 Provision of Space
    - 040202 Provision of Equipment
    - 040203 Maintenance Activities
  - 040300 Fiscal Control Activities
    - 040301 Comptrolling Activities
    - 040302 Budgetary Activities
    - 040303 Auditing Activities
  - 040400 Research Activities
    - 040401 Rehabilitation Research
    - 040402 Special Inquiry Research
  - 040500 Developmental Planning Activities
    - 040501 Planning for Facility Develpoment
    - 040502 Planning for Rehabilitation Programs
  - 041000 Institutional Programs
    - 041001 Psychological Counseling and Treatment
    - 041002 Agricultural Work Training Program
    - 041003 Mining and Manufacturing Training Programs
    - 041004 Recreation & Cultural Program
    - 041005 General Education Instruction
  - 041100 Supportive Services
    - 041101 Health Services & Treatment
    - 041102 Detention & Security Activities
    - 041103 Nutrition
    - 041104 Transportation
  - 041200 Post-Release Services
    - 041201 Parole Activities
    - 041202 Case Worker Services